IEEE P802.11
Wireless LANs

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| Proposed spec text for CID 296 (D1.0 LB) 🡪 CIDs 2365, 2109 (D2.0 LB) |
| Date: 2018-10-25 |
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Abstract

This submission proposes the spec text for a solution to the lost WUR non-AP STA problem in reference to CID 296 in 11-18-1794-00-00ba-comments-on-tgba-d1-0.xlsx. This CID was not resolved during D1.0 LB CR process and was resubmitted under CIDs 2109 and 2365 for D2.0 LB.

R0 – Initial Draft based on D1.0

R1 – Revised Initial Draft.

R2 – Revised submission based on D1.1

R3 – Made some small editorial changes.

R4 – Made some small editorial changes.

R5 – Incorporated comments from some reviewers

R6 – Incorporated comments from some reviewers

R7 – Editorial changes to reflect LB 237 CID numbers.

R8 – Ad hoc meeting remarks incorporated.

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** | **Comment** | **Proposed Change** | **Resolution** |
| 2109 | Gaurav Patwardhan | The following comment (in quotes) was submitted for D1.0 LB along with a technical proposal (11-18-1836-06-00ba-mac-cr-cid-296) to resolve the comment but the proposal was not presented despite offline conensus. Resubmitting the comment."When a WUR non-AP STA is operating in Duty Cycled mode and goes to sleep state for more than the agreed duty cycle period, there is a mismatch of the STA state at the AP where the AP does not know if the STA is still within the BSS range and still in sleep mode or it has moved outside the BSS range. At the AP, the knowledge of whether the STA is within the BSS range is an integral part of Usage model numbers 2 and 7 from the usage model document (11-17-0029-10-00ba-wur-usage-model-document.pptx)." | Already submitted proposal: 11-18-1836-06-00ba-mac-cr-cid-296 | Revised –Agree with the comment. TGba editor to make the changes shown in 11-18/1836r7. |
| 2365 | Mark Emmelmann | When a WUR non-AP STA is operating in Duty Cycled mode and goes to sleep state for more than the agreed duty cycle period, there is a mismatch of the STA state at the AP where the AP does not know if the STA is still within the BSS range and still in sleep mode or it has moved outside the BSS range. At the AP, the knowledge of whether the STA is within the BSS range is an integral part of Usage model numbers 2 and 7 from the usage model document (11-17-0029-10-00ba-wur-usage-model-document.pptx). | Picking up on comments made in the previous letter ballot on D1.0, the TG did not properbly address the issue raised in the comment, nor does the TG provide an indication that the text commented on has been deleted and hence the comment does not apply. (Note, page and line and sublause number refer to D1.0). In fact, as stated in the TGba minutes (11-19/226r0), the intend of the task group was to "Move to resolve CIDs that have no approved resolution as rejected with a reason read "TGba is unable to reach consensus on a resolution" in the interest of releasing draft 2.0". Also, the statement ""TGba is unable to reach consensus on a resolution" was added to the motion text there was one person speaking against the motion." was only added to the motion after objection to the original motion trying to reject comments in bulk with the reason of releasing a new LB.The TG is asked to give the original comment due consideration and debade the proposed comment resolution as included in 11-18/1794r10. The referenced document includes an actionable comment resolution. | Revised –Agree with the comment. TGba editor to make the changes shown in 11-18/1836r7. |

TGba Editor: Please modify this section as follows:

**9.4.2.274 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 9-772d (WUR Operation element format).

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| --- | --- | --- | --- | --- |
|  | ElementID | Length | ElementIDExtension | WUROperationParameters |
| Octets: | 1 | 1 | 1 | 10 |
|  |  |  |  |  |

**Figure 9-772d—WUR Operation element format**

The Element ID, Length, and Element ID Extension fields are defined in 9.4.2.1 (General).

The format of the WUR Operation Parameters field is defined in 9-772e (WUR Operation Parameters).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B7 | B8 B23 | B24 B31 | B32 B39 | B40 B45 | B56 B71 | B72 B75 | B76 | B77 B79 | B80 B95 |
|  | MinimumWake-upDuration | DutyCyclePeriodUnits | WUROperatingClass | WURChannel | WURBeaconPeriod | Offset of TWBTT | Counter | Common IPN | Reserved | WURConnectivityTimeout |
| Bits: | 8 | 16 | 8 | 8 | 16 | 16 | 4 | 1 | 3 | 16 |
|  |  |  |  |  |  |  |  |  |  |  |

**Figure 9-772e—WUR Operation Parameters**

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The Offset of TWBTT subfield indicates the TWBTT, which has the smallest TSF time in units of TU (see 31.4.2 (WUR Beacon Generation)).

The WUR Connectivity Timeout field indicates the time after which the connectivity with a WUR non-AP STA is considered lost by the WUR AP with which the STA has negotiated WUR mode negotiation (see 31.11 WUR Connectivity Timeout). The WUR Connectivity Timeout field is set to 0 to indicate that the AP does not support indicating a connectivity timeout value. The WUR Connectivity Timeout field is set to a nonzero value to indicate the time, in units of 100 TUs, after which the connectivity will be lost, wherein the timer starts from the most recently transmitted Group or Individually addressed WUR frame intended for the STA and resets with the first frame exchange initiated by the STA with the AP.

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

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TGba Editor: Please modify this section as follows:

**30.11 WUR Connectivity Timeout**

A WUR AP can indicate to a WUR non-AP STA the timeout in units of 100 TUs after which the AP considers the connection to the WUR non-AP STA to be lost. The WUR Connecivity Timeout field in the WUR Operation Element is used to indicate this timeout. This helps the AP to determine whether the WUR non-AP STA has moved outside the AP’s range or is in WUR Mode and non-responsive. The timer starts from the most recently transmitted Group or Individually addressed WUR frame intended for the STA and resets with the first frame exchange initiated by the STA with the AP. The timer is also reset for every WUR frame transmitted.

The action to be taken after determining that the connection to the WUR non-AP STA is lost is implementation specific and outside the scope of this standard.