IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed spec text for CID 296 | | | | |
| Date: 2018-10-25 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Gaurav Patwardhan | HPE |  |  | [gaurav.patwardhan@hpe.com](mailto:gaurav.patwardhan@hpe.com) |
| Eldad Perahia | HPE |  |  | [eldad.perahia@hpe.com](mailto:eldad.perahia@hpe.com) |
| Alfred Asterjadhi | Qualcomm Inc. |  |  | [aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com) |

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.

Comment submitted:

“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).”

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

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 9-751d (WUR Operation element format).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Element  ID | Length | Element  ID  Extension | WUR  Operation  Parameters | WUR  Parameters |
| Octets: | 1 | 1 | 1 | 10 | 1 |
|  |  |  |  |  |  |

**Figure 9-751g—WUR Operation element format**

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

The format of WUR Parametsers field is defined in 9-751e (WUR Operation Parameters).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Minimum  Wake-up  Duration | Duty  Cycle  Period  Units | WUR  Operating  Class | WUR  Channel | WUR  Beacon  Period | Offset of TWBTT | WUR  Connectivity  Timeout |
| Octets: | 1 | 2 | 1 | 1 | 2 | 2 | 1 |
|  |  |  |  |  |  |  |  |

**Figure 9-751e—WUR Operation element format**

…

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 WUR connectivity with a WUR non-AP STA will be considered to be 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 10 TUs, after which the WUR connectivity will be lost, wherein the timer starts from the most recently transmitted Group or Individually addressed WUR frame intended for the STA and stops 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.

...

TGba Editor: Please modify this section as follows:

**31.11 WUR Connectivity Timeout**

A WUR capable AP can indicate to a WUR non-AP STA the timeout in units of 10 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 stops with the first frame exchange initiated by the STA with the AP. The timer is 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.