### IEEE P802.11 Wireless LANs

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| 11ba D7.0 Comment Resolution for CID 8001 | | | | |
| Date: 2020-10-08 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Po-Kai Huang | Intel Corporation | 2200 Mission College Blvd, Santa Clara, CA 950542200 |  | po-kai.huang@intel.com |
| Minyoung Park |  |  |  |
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Abstract

This submission proposes resolutions for comments of TGba Draft D7.0 with the following CIDs:

8001

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Revision based on comments received on the reflector.

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 D7.0 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGba D7.0 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** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 8001 | 114.8 | 29.7 | An amendment is "timeless". That is, there is no "before this amendment" concept. It is considered/read as if it were part of the baseline document, and someday it will be rolled-in and will be part of the baseline document. So, the term "existing" is meaningless, unless there is a time-flow aspect to the procedures. In the case of WUR modes, a STA negotiates a PS mode, and also negotiates a WUR mode, and then enters doze state. There is no defined/required 'ordering' to the PS mode and WUR modes, so neither is "existing". Also, as has been pointed out in many other comments and resolutions, the WUR awake/doze operation are not a new PS mode, so there is no need to distinguish WUR operation from PS operation. | Delete "existing" in Figure 29-1. Delete "existing" in 29.8.3 (three occurrences), adding "power save" after "negotiated" in the first instance. Delete "existing" in 29.8.4 (three occurrences). Delete "existing" in 29.9.1. Delete "existing" in the first occurrence in 29.9.3, and replace "shall follow existing operation, which is any PS operation" with "shall follow any PS operation". In 29.9.4, replace "existing" with "negotiated" (two occurrences). | Revised –  We note that “existing” has been used in the baseline for describing “existing” agreement, schedule, and so on. We provide the following examples.  *The TWT Teardown frame (#2568)is sent by a STA to request the teardown of a TWT agreement and is transmitted by either STA of an existing TWT agreement.*  *A STA that performs a backoff within its existing TXOP per item e) above shall not extend the TXNAV timer value (see 10.23.2.8 (Multiple frame transmission in an EDCA TXOP)).*  *Either STA may update an existing schedule by initiating a TDLS Peer PSM Request/Response exchange. If the TDLS Peer PSM Response frame indicates status code SUCCESS, a new wakeup schedule is established for the TDLS direct link. Otherwise, the existing schedule still applies. The new schedule takes effect after the termination of the current TDLS peer PSM service period.*  *The existing FTM session is terminated upon reception of such a Fine Timing Measurement Request frame.*As a result, “existing” is a term that can be used and does not imply that it means the operation just in the baseline. It basically means whatever things that the two STAs have agreed to use.  However, we agree that the “existing” in Figure 29-1 could be interpreted as “before this amendment”, given its contrast to “As per WUR duty cycle operation”, which doesn’t exist before this amendment. Hence, we change ““As per existing PS operation” to “As per PS operation that the WUR non-AP STA and the associated WUR AP has agreed to use” in Figure 29-1, and change “As per WUR duty cycle operation” to “As per negotiated WUR duty cycle operation”, to avoid any misinterpretation.  For other cited instances of “existing”, when we already have description on saying “PS operation that AP and non-AP STA has agreed to use”, then we may not need to additionally say “existing PS power operation that AP and non-AP STA has agreed to use.” Or when we already have “negotiated service period”, then we may not need to say “existing negotiated SP”.  Based on this understanding, we then revise the texts correspondingly to avoid redundancy, but we do not do the suggested change for “existing traffic filter sets” in 29.9.1 (shown below) as suggested by the commenter since there is no redundancy there.  *If a WUR AP and an associated WUR non-AP STA support traffic filtering service (TFS) as specified in 11.22.12 (TFS Procedures), then the WUR AP and the WUR non-AP STA may reuse existing traffic filter sets to control the WUR Short Wake-up frame or the WUR Wake-up frame transmission as described in 29.9.3 (WUR AP operation).*  TGba editor to make the changes shown in 11-20/1596r1 under all headings that include CID 8001. https://mentor.ieee.org/802.11/dcn/20/11-20-1596-01-00ba-cr-for-cid-8001.docx |

**Discussion:** *None.*

***TGba editor: In Figure 29-1, change both instances of “As per existing PS operation” to “As per PS operation that the WUR non-AP STA and the associated WUR AP has agreed to use”, change “As per WUR duty cycle operation” to “As per negotiated WUR duty cycle operation”, and add “As per negotiated WUR duty cycle operation” to the arrow from WUR doze state to WUR awake state. (#8001)***

***TGba editor: Change 29.8.3 WUR power management operation for a WUR AP as follows: (track change on)***

* WUR power management operation for a WUR AP

For each WUR non-AP STA that requests WUR power management service from an associated WUR AP, the WUR AP shall maintain a WUR status that indicates whether the WUR non-AP STA is in WUR mode or WUR mode suspend.

If a WUR non-AP STA is in WUR mode, then:

* The negotiated WUR parameters between the WUR AP and the WUR non-AP STA are maintained by the WUR AP.
* The WUR AP shall schedule for transmission a WUR Wake-up frame or a WUR Short Wake-up frame for the WUR non-AP STA during a WUR duty cycle service period that is negotiated with the WUR non-AP STA to notify the WUR non-AP STA that the WUR AP intends to have operation with the WUR non-AP STA as described in 29.9.3 (WUR AP operation) and 29.9.4 (WUR non-AP STA operation) if the WUR non-AP STA is in the doze state (see 11.2.1 (General)). The WUR Short Wake-up frame or the WUR Wake-up frame classifies as a keep-alive WUR frame for a WUR non-AP STA that has requested the transmission of keep-alive WUR frames during WUR mode setup.
* The WUR AP shall schedule for transmission a WUR Beacon frame during a WUR duty cycle service period that is negotiated with the WUR non-AP STA as a keep-alive WUR frame if the WUR AP does not schedule for transmission a WUR Short Wake-up frame or a WUR Wake-up frame for the WUR non-AP STA during that WUR duty cycle service period and the WUR non-AP STA has requested the transmission of keep-alive WUR frames during a successful WUR mode setup (see 29.8.2 (WUR mode setup)).
* The negotiated service periods between the WUR AP and the WUR non-AP STA for the WUR non-AP STA’s schedule are suspended, i.e., the WUR non-AP STA is not required to be in the awake state (see 11.2.1 (General)) during the negotiated service period: ***(#8001)***
* After the WUR AP transmits a WUR Short Wake-up frame or a WUR Wake-up frame addressed to the WUR non-AP STA with an indication of individually addressed buffered BU(s), the WUR AP expects that the WUR non-AP STA is in the awake state (see 11.2.1 (General)) at the earliest service period, which has end time larger than the received time of the frame plus the transition delay indicated by the WUR non-AP STA in the WUR Capabilities elements, following the PS operation (e.g., individual TWT) agreed between the WUR AP and the WUR non-AP STA. *(#8001)*
* The parameters of the negotiated service period for the WUR non-AP STA’s schedule between the WUR AP and the WUR non-AP STA are maintained by the WUR AP.
* The WUR AP shall follow the wake-up operation defined in 29.9 (Wake-up operation).

(…existing texts….)

***TGba editor: Change 29.8.4 WUR power management operation for a WUR non-AP STA as follows: (track change on)***

* WUR power management operation for a WUR non-AP STA

(…exsiting texts…)

If a WUR non-AP STA is in WUR mode, then:

* The negotiated WUR parameters between the WUR AP and the WUR non-AP STA are maintained by the WUR non-AP STA.
* If the WUR non-AP STA is considered by the WUR AP to be in the doze state (see 11.2.1 (General)), the WUR power state of the WUR non-AP STA shall be in the WUR awake state during the WUR duty cycle service period agreed between WUR AP and WUR non-AP STA. Otherwise, the WUR power state of the WUR non-AP STA may be in the WUR doze state.
* The WUR power state of the WUR non-AP STA may be in the WUR doze state after the WUR non-AP STA completes a successful frame exchange with the WUR AP, and the frame exchange informs the WUR AP that the WUR non-AP STA is in the awake state (see 11.2.1 (General)).
* The WUR non-AP STA may or may not wake up to receive Beacon frame if the WUR non-AP STA is in PS mode (see 11.2.3.1 (General)).
* The negotiated service periods between WUR AP and WUR non-AP STA for the WUR non-AP STA’s schedule are suspended, and the WUR non-AP STA may be in the doze state (see 11.2.1 (General)) during the negotiated service periods until the schedule is resumed as described below: (#8001)
* After the WUR non-AP STA receives a WUR Short Wake-up frame or a WUR Wake-up frame addressed to it from the WUR AP with an indication of individually addressed BU(s), the WUR non-AP STA shall be in the awake state (see 11.2.1 (General)) at the earliest service period, which has end time larger than the received time of the frame plus the transition delay indicated by the WUR non-AP STA in the WUR Capabilities element, following the PS operation (e.g., individual TWT) agreed between the WUR AP and the WUR non-AP STA.(#8001)
* The parameters of the negotiated service period for the WUR non-AP STA’s schedule between the WUR AP and the WUR non-AP STA are maintained by the WUR non-AP STA.
* The WUR non-AP STA shall follow the wake-up operation defined in 29.9 (Wake-up operation).

NOTE 1—The WUR duty cycle service period agreed between WUR AP and WUR non-AP STA can be that the WUR power state of the WUR non-AP STA is always in the WUR awake state.

NOTE 2—Examples of the negotiated service period between WUR AP and WUR non-AP STA for the WUR non-AP STA’s schedule include individual TWT and schedule for WNM sleep mode.

NOTE 3—The WUR power state of a WUR non-AP STA is implementation specific if the WUR non-AP STA is in the awake state (see 11.2.1 (General)).

NOTE 4—The WUR non-AP STA might not wake up at the exact start time of the earliest service period.

If a WUR non-AP STA is in WUR mode suspend, then:

* The WUR power state of the WUR non-AP STA may be in the WUR doze state.
* The negotiated WUR parameters between the WUR AP and the WUR non-AP STA are maintained by the WUR non-AP STA.

NOTE—If a WUR non-AP STA is in WUR mode suspend, the negotiated service period between WUR AP and WUR non-AP STA for the WUR non-AP STA’s schedule is active.(#8001)

***TGba editor: Change 29.9.3 WUR AP operation as follows: (track change on)***

* WUR AP operation

A WUR AP that transmits a WUR Short Wake-up frame or a WUR Wake-up frame to a WUR non-AP STA that indicates the availability of individually addressed BU(s) shall follow the PS operation defined in 11.2 (Power management) and 26.8 (TWT operation) that the WUR AP and the WUR non-AP STA has agreed to use (e.g., active mode and PS mode change, U-APSD, TWT, etc.), to deliver individually addressed BU(s) to the WUR non-AP STA and follow the timing information (e.g., the next service period) that is provided along with the agreed PS operation.(#8001)

NOTE—As described in 29.3 (Channel access), a WUR AP can transmit multiple WUR Wake-up frames in a TXOP (see 10.23.2.8 (Multiple frame transmission in an EDCA TXOP)).

(…existing texts….)

***TGba editor: Change 29.9.4 WUR non-AP STA operation as follows: (track change on)***

* WUR non-AP STA operation

A WUR non-AP STA that receives a WUR Short Wake-up frame or a WUR Wake-up frame addressed to it with an indication of individually addressed BU(s) (see 29.9.1 (General)) shall follow the PS operation defined in 11.2 (Power management) and 26.8 (TWT operation) that the associated WUR AP and the WUR non-AP STA has agreed to use (e.g., power management mode change, U-APSD, TWT, etc.), to retrieve individually addressed BU(s) and follow the wake up timing information (e.g., the next service period) that is provided along with the agreed PS operation. In this case, the WUR non-AP STA may be in the doze state (see 11.2.1 (General)) until the time indicated by the wake up timing information (e.g., the next service period) that is provided along with the agreed PS operation.(#8001)

(…existing texts….)