IEEE P802.11
Wireless LANs

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Abstract

This submission proposes resolutions for multiple comments related to TGax D1.0 with the following CIDs:

* CIDs: 6040, 7420, 7421, 7601

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 TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify existing material in the TGax draft. As a result of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

# Power save with UORA (27.14.2)

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 6040 | 200.35 | 27.14.2 | If a non-AP STA in power save mode has transmitted during the UL OFDMA random access and the TWT SP initiated by the UL OFDMA random access has been terminated, the non-associated STA should have easy way to continue data exchange at the following TWT flows. | Please allow the non-associated STA to assign preassociation AID and to wake at the next TWT SP of the same TWT flow that it was used for the UL OFDMA random access. This ensures that AP knows when the non-associated STA is again available for the data transmission, allows the non-AP STA in power save mode to operate in Doze state and reduces contention during random access. | Rejected.The unassociated STA can remain awake after the TWT SP and send SU frames to the AP and this was discussed in the past and TGax decided to not pursue the concept of pre-association AID.And, when unassociated STA receives a Beacon including Broadcast TWT information, the STA can know the start time of next TWT SPs. If the STA doesn’t finish data exchange using UORA during the current TWT SP, the STA can resume the data exchange at the next SPs. In that case, the STA can enter the doze state until the start of the next SP. For the purpose, AP doesn’t need to allocate the pre-association AID to the STA individually. |
| 7420 | 200.21 | 27.14.2 | The condition for an HE STA to enter the doze state for a trigger-enabled TWT SP is incomplete. For example, if the TWT Flow Identifier subfield in a TWT element has a value of 0, HE STA may also enter the doze state until the start of that TWT SP defined by the TWT element. | Change"An HE STA that receives a Beacon frame or a management frame containing a TWT element that has a value of 1 in the Broadcast subfield a value of 2 in the TWT Flow Identifier subfield may enter the doze state until the start of that TWT SP..."to"An HE STA that receives a Beacon frame or a management frame containing a TWT element that has a value of 1 in the Broadcast subfield, a value of 1 in the Trigger subfield, a value of either 0 or 2 in the TWT Flow Identifier subfield may enter the doze state until the start of that TWT SP..." |  Revised.During broadcast TWT SP with TWT FID=2, Trigger frames include at leaset one random access RU. But, during broadcast TWT SP with FID=0, AP may or may not send a TF with RA RUs. Therefore, a UORA STA may wake up during the TWT SP with FID=0 to find if AP sends TF with RA RU. So, we don’t need to include the condition of TWT FID=0 in the indicated text.And, the description of Trigger field need to be updated in subclause 27.7.3.2 because the Trigger field in TWT element indicates whether or not the Trigger frame is sent during the TWT SP and Implicit TWT is indicated by Implicit field.TGax editor: Please make changes as suggested in doc 11-17/1351r0 |
| 7421 | 200.24 | 27.14.2 | It is possible for an HE STA to enter the doze state for a trigger-enabled TWT SP in various ways. For one example, when an HE STA receives a Beacon frame or a management frame containing the TWT element with the Broadcast subfield set to 1, the Trigger subfield set to 1 and the TWT Flow Identifier subfield set to 1, namely, the trigger-based TWT SP defined by the TWT element contains no any RUs for random access, it may enter the doze state at least until the end of the TWT SP defined by the TWT element. For another example, when an HE STA receives a Beacon frame or a management frame containing the TWT element with the Broadcast subfield set to 1 and the Trigger subfield set to 0, namely, the TWT SP defined by the TWT element contains no any Trigger frame, it may enter the doze state at least until the end of the TWT SP defined by the TWT element. | Insert the following statements after the second paragraph of page 200:"An HE STA that receives a Beacon frame or a management frame containing the TWT element with the Broadcast subfield set to 1, the Trigger subfield set to 1 and the TWT Flow Identifier subfield set to 1 may enter the doze state at least until the end of the TWT SP defined by the TWT element. An HE STA that receives a Beacon frame or a management frame containing the TWT element with the Broadcast subfield set to 1 and the Trigger subfield set to 0 may enter the doze state at least until the end of the TWT SP defined by the TWT element." | Rejected.During broadcast TWT SP with TWT FID=2, Trigger frames include at leaset one random access RU. So, the STA should wake up at the start time of the TWT SP with Trigger = 1 & FID = 2 to receive Trigger frame incuding random access RU in the TWT SP.This means the STA may be in doze state for all other cases (including FID=1).Therefore, we don’t need to describe in the spec all other conditions for STA to stay in the doze state. |
| 7601 | 200.28 | 27.14.2 | Clarify the following behavior:In a TWT SP whose Broadcast subfield is 1 and TWT Flow Identifier subfield is 2, can a Trigger frame with no contention RU be transmitted?If the answer is yes, can Trigger frame that has no allocated contention RU follow Trigger frame which has Cascade Indication field set to 0 and has conttention RU? | Clarify it. | RevisedAccording to a text on page 116, line 52 in D1.4 (9.4.2.200 TWT element), in a TWT SP whose Broadcast subfield is 1 and TWT Flow Identifier subfield is 2, Trigger frames contains at least one RU for random access. Therefore, in this case, Trigger frame with no contention RU cannot be transmitted.According to 9.3.1.23 (Trigger frame format), if the Cascade Indication is set to 0, any subsequent TFs doesn’t follow the TF. TGax editor: No further changes are needed. |

**Discussion:None.**

**Proposed text**

**TGax Editor: Modify the subclause 27.7.3.2 (Rules for TWT scheduling AP) as follows:**

**27.7.3.2 Rules for TWT scheduling AP(#6919)**

**…**

The TWT scheduling AP(#6919) shall set the TWT Request subfield to 0 and the TWT Setup Command subfield to Accept TWT, except that it may set the TWT Setup Command subfield to:

— Reject TWT when the periodic TWT is being terminated or,

— Alternate TWT when the periodic TWT is being modified

The TWT scheduling AP(#6919) shall set the Trigger field to 1 to indicate a trigger-enabled TWT. Otherwise, it shall set the Trigger field to 0 to indicate an absence of Trigger frames during the TWT SP.(#7420)