IEEE P802.11
Wireless LANs

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| Comment Resolution on TIM Broadcast |
| Date: 2017-05-09 |
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Abstract

This submission proposes resolutions of comments received from TGax comment collection (TGax Draft 1.0).

* CIDs: 5973 and 9870
1. **Introduction**

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. The introduction and the explanation of the proposed changes are 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.***

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| CID | Commenter | Page Number | Line Number | Comment | Proposed Change | Resolution |
| 5973 | Jarkko Kneckt | 143 | 48 | Currently the Check Beacon field is updated when the Broadcast TWT element is added or removed from Beacon. To avoid Beacon bloat, the Broadcast TWT element should not be present in every beacon frame, but then the Check Beacon field may request that non-AP STAs receive the Beacon unnecesserily which may increase the non-AP STA power consumption. It would be better to update the Check Beacon field when information in Broadcast TWT element is modified. Also some description should be added that TWT element may not be present in every beacon. | Change the n) Inclusion of a Broadcast TWT element to n) Modification of a Broadcast TWT element. Also please add a note saying that Broadcast TWT element may not be present in every Beacon frame and modified TWT broadcast element means a change in the parameter value. | Revised –The check Beacon field in TIM Broadcast causes all STAs to receive a Beacon. Also, STAs that are not BC TWT capable will receive Beacons which increases their power consumption. The TWT element is included to very many beacons. This may cause frequent updates to the check beacons counter. The STAs that are using Broadcast TWT can set Wake TBTT and listen interval to receive specific Beacons. Thus, even Broadcast TWT STAs do not need to be aware of all changes in the TWTs. The STAs using BC TWT are encouraged to use Wake TBTT and Listen Interval, or receive beacons frequently enough to keep their TWT schedule. If a STA starts to use the broadcast TWT, the STA should receive a Beacon to detect the latest Broadcast TWT schedules. Thus, there is not need to update Check Beacon counter based on inclusion or modification of the TWT element.**TG**ax editor to make the changes shown in 11-17/811r1 under all headings that include CID 5973.  |
| 9870 | Young Hoon Kwon | 143 | 48 | One Broadcast TWT element can have multiple broadcast TWT schedules. Therefore, even in case there'sa Broadcast TWT element included in a Beacon frame, its scheduled access can be modified at any time. In this sense, any change/modification in Broadcast TWT element may be considered as a critical update. | Change the item n) to "Inclusion or modification of a Broadcast TWT element" | Revised –The check Beacon field in TIM Broadcast causes all STAs to receive a Beacon. Also, STAs that are not BC TWT capable will receive Beacons which increases their power consumption. The TWT element is included to very many beacons. This may cause frequent updates to the check beacons counter. The STAs that are using Broadcast TWT can set Wake TBTT and listen interval to receive specific Beacons. Thus, even Broadcast TWT STAs do not need to be aware of all changes in the TWTs. The STAs using BC TWT are encouraged to use Wake TBTT and Listen Interval, or receive beacons frequently enough to keep their TWT schedule. If a STA starts to use the broadcast TWT, the STA should receive a Beacon to detect the latest Broadcast TWT schedules. Thus, there is not need to update Check Beacon counter based on inclusion or modification of the TWT element.**TG**ax editor to make the changes shown in 11-17/811r1 under all headings that include CID 9870.  |

1. **Proposed changes**

***TGax editor: Modify section 11.2.2.17 as the following:***

**11.2.2.17 TIM Broadcast**

***Change the 11th paragraph as follows:***

The AP shall increase the value (modulo 256) of the Check Beacon field in the next transmitted TIM frame(s) when a critical update occurs to any of the elements inside the Beacon frame.The following events shall classify as a critical update:

a) Inclusion of a Channel Switch Announcement element

b) Inclusion of an Extended Channel Switch Announcement element

c) Modification of the EDCA parameters element

d) Inclusion of a Quiet element

e) Modification of the DSSS Parameter Set

f) Modification of the CF Parameter Set element

g) Modification of the HT Operation element

h) Inclusion of a Wide Bandwidth Channel Switch element

i) Inclusion of a Channel Switch Wrapper element

j) Inclusion of an Operating Mode Notification element

k) Inclusion of a Quiet Channel element

l) Modification of the VHT Operation element

m) Modification of the HE Operation element

~~n) Inclusion of a Broadcast TWT element~~ (#9870, #5973)

o) Inclusion of BSS Color Change Announcement element