### IEEE P802.11Wireless LANs

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| CC36 CR for 35.6.4 Channel access rules for restricted TWT service periods |
| Date: 2021-08-05 |
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Abstract

This submission proposes resolutions on the following CID related to 35.6.4.1 General for CC36.

CID: 5949

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Revision Notes

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| R0 | Initial revision |
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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 TGbe D1.1 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbe D1.1 Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

## CID 5949

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| **Page. Line** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 298.42 | 35.6.4.1  | The current specification of the rule is imprecise. The intention of the rule is to avoid the TXOP overlaping with the restricted TWT service periods to be ocuppied by other STAs. If the non-AP EHT STA as a TXOP holder ends the TXOP too early, the duration from the end time of TXOP to the start time of the restricted TWT service period is so long that another legacy STA may easily preempt the channel to obtain the TXOP again. | The restriction is suggested to be further specified on the operation that the TXOP ends before the start of any restricted TWT service periods, especially the duration from the end time of TXOP to the start time of the restricted TWT service period should be limited | RevisedAgreed it is necessary to clarify the operation that the TXOP ends before the start of any restricted TWT service periods.**Instruction to the editor**, ***please change the eighth paragraph of 10.23.2.4 Obtaining an EDCA TXOP, and change the first paragraph of 35.7.4.1 General, as shown in this document (doc.: IEEE 802.11-21/1291r0).*** |

**Discussion:**

Draft 1.01 has specified the following rule for the protection of restricted TWT service periods:

A non-AP EHT STA with dot11RestrictedTWTOptionImplemented set to true as a TXOP holder shall ensure the TXOP ends before the start of any restricted TWT service periods if the TXOP is obtained outside of a restricted TWT service period.

In order to protect restricted TWT service periods the two issues need to be considered:

1) the TXOP obtained by a non-AP EHT STA should end before the start of any restricted TWT service periods.

2) the time interval from the end time of TXOP obtained by a non-AP EHT STA to the start time of the nearest restricted TWT service period should be limited so that another legacy STA may not preempt the channel to obtain the TXOP again.

And there are two methods to protect restricted TWT service periods for non-AP EHT STA to obtain a TXOP outside of the restricted TWT service periods.

1) When a non-AP EHT STA starts to obtain a TXOP and initiate a transmission sequence it needs to ensure that the end time of a transmission sequence to be initiated will not be later than the start of any restricted TWT service periods.

2) If a non-AP EHT STA doesn’t consider whether to be later than the start of any restricted TWT service periods when obtaining a TXOP outside of a restricted TWT service period, during the time duration of the TXOP the CF-end frame can be transmitted before the start of the nearest restricted TWT service period (denoted as T) and the time interval between the end time of the transmission of CF-end frame and T is not larger than SIFS on the condition that the end time of the initially obtained TXOP is later than T.

Therefore the controllable range of the time interval between the end time of the TXOP and the start of the nearest restricted TWT service period can be not larger than SIFS for a non-AP EHT STA.

**Proposed Text Change:**

**1. Proposed Text Change for “10.23.2.4 Obtaining an EDCA TXOP”**

**TGbe editor**: ***at P1741 of IEEE Std 802.11™‐2020,*** ***please*** change the eighth ***paragraph of 10.23.2.4 Obtaining an EDCA TXOP*** (CID 5949)

**10.23.2 HCF contention based channel access (EDCA)**

**10.23.2.4 Obtaining an EDCA TXOP**

Change the eighth paragraph as follows:

At each of the above-described specific slot boundaries, each EDCAF shall initiate a transmission sequence if

— There is a frame available for transmission at that EDCAF, and

— The backoff counter for that EDCAF has a value of 0, and

— Initiation of a transmission sequence is not allowed to commence at this time for an EDCAF of higher UP

— **The end time of a transmission sequence to be initiated outside of a restricted TWT service period will not be later than the start of any restricted TWT service periods if present for a non-AP EHT STA with dot11RestrictedTWTOptionImplemented set to true.**

**2. Proposed Text Change for “35.7.4.1 General”**

**TGbe editor**: ***at P320 of IEEE P802.11be™/D1.01, please change the first paragraph of 35.7.4.1 General*** (CID 5949)

**A non-AP EHT STA with dot11RestrictedTWTOptionImplemented set to true shall ensure that the end time of a transmission sequence to be initiated will not be later than the start of any restricted TWT service periods if present when obtaining an EDCA TXOP outside of a restricted TWT service period.**

A non-AP EHT STA with dot11RestrictedTWTOptionImplemented set to true as a TXOP holder shall ensure the TXOP ends before the start of any restricted TWT service periods if the TXOP is obtained outside of a restricted TWT service period, **and shall ensure that the time interval between the end time of the TXOP and the start of the nearest restricted TWT service period is not larger than SIFS if the end time of the initially obtained TXOP tends to be later than the start of the nearest restricted TWT service period.**