IEEE P802.11
Wireless LANs

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| **Proposed Resolution to CID 9947** |
| **Date:** 2017-05-03 |

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Abstract

This submission proposes the resolution for comment CID 9947 related to TGax D1.2.

NOTE- The proposed changes on this document is based on TGax D1.2

Revisions:

* Rev 0: Initial version of the document.

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| **CID** | **Clause Number** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 9947 | 27.9.2.2 | 192.20 | 27.9.2.2 | If a STA regards an inter-BSS PPDU as not having been received at all using a specific transmission power and resumes backoff process, it is not clear if the STA is allowed to increase the transmission power. If the increase of the transmission power is allowed, the STA may use the lowest transmission power during the backoff process to have more chance of SR transmission and then increases the transmission power right before the backoff reaches zero. This may give unfair competition and shall not be allowed. Further clarification is needed. | As in the comment. | RevisedAdd the description for the condition when the STA is allowed to increase the transmission power. |

**Discussion**

Abstract

This document provides resolutions for the following CIDs on Clause 25.9.3. The baseline for this comment resolution document is 802.11ax Draft 0.1.

* CIDs: 705, 706

11ax Draft 1.2 specifies that “If a STA regards an inter-BSS PPDU as not having been received at all using a specific *OBSS\_PDlevel*, the STA’s power as measured at the output of the antenna connector, shall be equal or lower than the *TXPWR-max*, calculated with this specific *OBSS\_PDlevel* with Equation (27-3), for the transmissions of any PPDU (including UL TB PPDU) until the end of the TXOP that the STA gains once its backoff reaches zero.”

Proposal 11/17-267r5 suggested to add the following definition about SR transmit power restriction period based on the above statement. “

If a STA ignores an inter-BSS PPDU following the procedure in 27.9.2.1, using a chosen SRG OBSS\_PDlevel, or a chosen NON SRG OBSS\_PDlevel shall start an OBSS\_PD SR transmit power restriction period. This OBSS\_PD SR transmit power restriction period shall be terminated at the end of the TXOP that the STA gains once its backoff reaches zero.

Agree that it is necessary to set an OBSS\_PD SR transmit power restriction period to avoid the interference to the ignored OBSS TXOP. However, the issue here is that it is not always propriate to set the end of power restriction period at the end of TXOP that the STA gains once its backoff reaches zero.

The reasons are as follows:

* If a STA gains a TXOP once its backoff reaches zero after all ignored OBSS TXOPs have already terminated, then it is not necessary to limit the tx power for the TXOP based on previously selected OBSS\_PD level because it will cause over-limitation to the transmission taking advantage of SR backoff so that the quality of the transmission that happens outside of the ignored OBSS TXOP will be downgraded, and the system performace will also be further downgraded due to less efficient medium utilization.
* If a STA gains a TXOP once its backoff reaches zero and then the TXOP terminates before the end of any ignored OBSS TXOP, the STA may start another backoff procedure using non OBSS\_PD level and then start an TXOP without the power restriction due to hidden to an OBSS STA involved in the ignored OBSS TXOP. The new TXOP might interfere the ignored OBSS TXOPs, which is a flaw of SR scheme.
* The power restriction period is not a proper way to assure the unfairness caused by SR backoff. The SR operation is anyway unfair to legacy STAs if the SR TXOP is allowed to be beyond the ignored OBSS TXOP. The way to improve the fairness is to limit the SR TXOP medium occupation time. Therefore it is better to allow the increase of tx power when the SR TXOP happens outside the ignored OBSS TXOP.

**Proposed resolution**

***Detailed implementation of the resolution***

Make the following changes to TGax D 1.2.

***11ax Editor: Add a new subsection 27.9.2.2a OBSS\_PD SR transmit power restriction period as follows:***

If a STA ignores an inter-BSS PPDU following the procedure in 27.9.2.1, using a chosen SRG OBSS\_PDlevel, or a chosen NON SRG OBSS\_PDlevel shall start an OBSS\_PD SR transmit power restriction period. This OBSS\_PD SR transmit power restriction period shall be terminated at the end of the TXOP that the STA gains once its backoff reaches zero before all ignored OBSS TXOPs have terminated.