IEEE P802.11
Wireless LANs

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| cc50-cid-1783-discussion-on-npca-minimum-duration-threshold |
| Date: April 10, 2025 |
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 Abstract

This submission proposes resolution for CID 1783 received for CC50.

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Change the document format from ppt to doc
* Rev 2: Correction of typo “TGbf” with “TGbn”

***TGbn editor: The baseline for this document is P802.11bn D0.2 and P802.11REVmeD7.0***

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

# **CID 1783:**

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| **CID** | **Commenter** | **Clause** | **Page.line** | **Comment** | **Proposed Change** | **Resolution** |
| 1783 | Chaoming Luo | 37.10 | 78.01 | The NPCA Minimum Duration Threshold should be long enough to complete at least one frame exchange in the NPCA P-channel, otherwise it's waste of power to do the switch. | As in comment. | **Revised**Agree with the commenter in principle.**TGbn editor, please incorporate changes tagged with 1783 in 11-25/0537r2.** |

## **Discussion**:

11bn draft 0.2 defines: The NPCA Minimum Duration Threshold field indicates the minimum duration of inter-BSS activity (inter-BSS PPDU or inter-BSS TXOP) that is required to have been indicated on the primary channel of the BSS as a necessary condition to permit an NPCA STA to switch to the NPCA primary channel to perform NPCA operation. The encoding and the maximum value of this field are TBD.

As stated in the comment, we should also limit the **minimum value** of **the NPCA Minimum Duration Threshold field** to avoid meaningless NPCA switching.

A simple analysis for the minimum time the NPCA operation consumes as follows:

* At least a NPCA Switching Delay of the AP
* At least one EDCA backoff, consumes a minimum of PIFS, i.e., 25 us.
* At least one ICF + SIFS + ICR + SIFS sequence, consumes a minimum around 232 us.
	+ Assume ICF takes around 128 us (using non-HT PPDU or non-HT duplicate PPDU format using a rate of 6 Mb/s, 12 Mb/s, or 24 Mb/s), ICR takes around 72 us.
* At least one Data + SIFS + Ack/BA sequence, consumes a minimum around 160 us.
	+ Assume Data takes at least 72 us, Ack/BA takes around 72 us.
	+ Although QoS Data with No Ack ack policy do not need Ack, prefer to still consider Ack in NPCA as a common case.

Based on the analysis above, we propose:

The minimum value of the NPCA Minimum Duration Threshold field is greater than or equal to the NPCA Switching Delay of the AP plus 417 us.

## **Proposed Text:**

**9.4.2.aa1 UHR Operation Element**

***TGbn Editor: Please modify the paragraph at P66L26 in 11bn D0.2 as follows:***

The NPCA Minimum Duration Threshold field indicates the minimum duration of inter-BSS activity (inter-BSS PPDU or inter-BSS TXOP) that is required to have been indicated on the primary channel of the BSS as a necessary condition to permit an NPCA STA to switch to the NPCA primary channel to perform NPCA operation. The encoding and the maximum value of this field are TBD. The minimum value of the NPCA Minimum Duration Threshold field is greater than or equal to the NPCA Switching Delay of the NPCA AP of the BSS plus 417 us. *[1783]*

# **SP**

Do you support resolution to the CID 1783 and incorporate the corresponding text changes in 11-25/0537r2 into the latest TGbn draft?

Y/N/A