IEEE P802.11
Wireless LANs

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| cc50-cid-1773-npca-annoucement |
| Date: June 5, 2025 |
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 Abstract

This submission proposes resolution for CID 1773 received for CC50.

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Change the document format from ppt to doc

***TGbn editor: The baseline for this document is P802.11bn D0.3 and IEEE Std 802.11-2024***

# **CID 1780**:

***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.***

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| **CID** | **Commenter** | **Clause** | **Page.line** | **Comment** | **Proposed Change** | **Resolution** |
| 1773 | Chaoming Luo | 37.10 | 78.01 | In order to solve different view problem when observing OBSS transmission in NPCA procedure, the AP observing the OBSS transmission would be better to send a short signal during the SIFS to inform STAs in the BSS to switch to NPCA P-channel. | As in comment. | **Revised**Agree with the commenter in principle.**TGbn editor, please incorporate changes tagged with 1773 in 11-25/0539r1.** |

## **Discussion**



As proposed in the comment and shown in the figure, when AP1 detects AP2’s transmission of a control frame exchange (i.e., RTS/CTS) on the BSS primary channel, AP1 may send **a short signal** during the SIFS to announce NPCA switch.

Non-AP STAs associated with AP1 may switch to NPCA primary channel upon the receipt of this short signal.

**Design of The Short Signal:**

* **Option 1 (Preferred)**: The short signal may be an STF (4 us) plus an LTF (3.2 us) with 1.6 us GI which takes 8 us
	+ It should be more than or equal to 4 us considering minimum receiver detecting time. [1]
	+ It should be less than a SIFS (e.g., 16 us) to minimize the impact to the ongoing OBSS transmission
		- As stated in baseline clause 10.3.2.11: If an RTS/CTS exchange is used, the PPDU containing an individually addressed Data or Management frame shall be transmitted starting one SIFS after the end of the CTS frame. No regard is given to the busy or idle status of the medium when transmitting this PSDU.
	+ The transmission of the short signal obeys the regulatory. ([2], Short Control Signalling Transmissions)
	+ The short signal may be transmitted on a dedicated RU
		- AP1 and AP2 use different RUs to identify themselves to their associated STAs.
		- AP1 and AP2 can negotiate the RUs to avoid conflict.
	+ Further random phase rotation could be applied to the LTF symbol
		- Alternate way to reduce conflict between APs
		- To mitigate the possible replay attack.
* **Option 2**: The short signal may be an orthogonal code division multiplexing (CDM) sequence, e.g., Zadoff-Chu sequence. Detail design TBD.

## **Proposed Text starts**

**37.16 Non-primary channel access (NPCA)**

An NPCA STA may switch to the NPCA primary channel for NPCA operation if the value of the most recently received or transmitted NPCA Operation Information Present field corresponding to the BSS of which it is a member is equal to 1 and either condition 1) or 2) is met:

…

***TGbn Editor: Please add the following paragraph at P151L19 in 11bn D0.3:***

Before an NPCA AP switches from the BSS primary channel to the NPCA primary channel based on meeting condition 2) above, the NPCA AP may send a short signal during the SIFS after the inter-BSS PPDU containing an initial response frame of the Control frame exchange on the BSS primary channel, to announce it intends to switch to the NPCA primary channel. The short signal is an UHR-STF plus an 1x UHR-LTF with 1.6 us GI. (#1773)

When an NPCA STA switches to the NPCA primary channel for NPCA operation, then the following rules apply:

…

## **Proposed Text ends**

# **SP**

Do you support resolution to the CID 1773 and incorporate the corresponding text changes in 11-25/0539r1 into the latest TGbn draft?

Y/N/A

# **References**

[1] 11-24-0284-02-00bn-low-latency-low-collision-low-power-uhr-medium-access

[2] EN 301 893v2.1.1