IEEE P802.11
Wireless LANs

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| PDT-CR-MAC-NPCA-enablement-disablement-update |
| Date: 2025-07-28 |
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Abstract

This document contains suggested changes to Draft IEEE P802.11bn\_D0.3 for the Non-Primary Channel Access (NPCA) feature, based on some comments collected in CC50. Specifically, in this document some definitions related to NPCA are modified, in order to distinguish “the STA that supports NPCA” and “the STA that has enabled NPCA”.

Related CIDs in CC50: 435, 785, 2144, 2676, 246, 914, 1209, 1215, 1507, 2139, 2140, 3408

# Revision information

The following is a summary of the important changes that occurred within each revision of this document:

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| **Revision** | **Major changes** |
| 0 | Initial revision |
| 1 | Remove most technical changes related to NPCA enable/disable/update, and leaves them to the generic mode enablement/disablement/update part. |
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# 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 TGbe Draft. The abstract, revision information, introduction, explanation of the proposed changes, discussion and references sections are not part of the adopted material.

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

## Explanation of the proposed changes:

The proposed changes to the 802.11 TGbn draft 0.3 within this document are based on CIDs obtained through CC50.

## DISCUSSION:

## Open Issues:

## CID LIST:

NOTES:

a) Some CIDs are shaded gray, this typically means that someone else has volunteered to provide a resolution for the CID.

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| **CID** | **Commenter name** | **Subclause. page** | **Page.****line** | **Comment** | **Proposed change** | **Proposed resolution** |
| 435 | Shuang Fan | 37.10 | 78.17 | It's not clear about the definition of NPCA AP.The current text in line 23 mentions 'An NPCA AP that has an operating bandwidth less than TBD (but either 80 or 160 MHz) shall not enable NPCA operation', this imply an AP with bandwidth less than TBD shall not support NPCA opeation and shall not set NPCA Supported field of the UHR MAC Capabilities Information field of the UHR Capabilities element to 1 | Change the sentence 'An AP that supports NPCA operation is called an NPCA AP' to 'An AP with bandwidth larger than TBD (either 80 or 160 MHz) that supports NPCA operation is called an NPCA AP, and an NPCA AP shall set the NPCA Supported field of the UHR MAC Capabilities Information field of the UHR Capabilities element to 1' | Revised –The NPCA STA is now defined as a STA that has enabled NPCA operation.TGbn editor to make changes marked with CID 435 found in 11-25-0996r1. |
| 785 | Seongho Byeon | 37.10 | 78.17 | We need to define NPCA AP's capability setting. For example, we can change the first parapraph as below (note that NPCA STA can be either NPCA AP or NPCA non-AP STA as it means):"A STA that supports NPCA operation is called an NPCA STA. An NPCA STA shall set the NPCA Supported field of the UHR MAC CapabilitiesInformation field of the UHR Capabilities element to 1. An AP that supports NPCA operation is called an NPCA AP. A non-AP NPCA STA may enable the NPCA mode only if it is associated with an NPCA AP. It is TBD how the non-AP STA enables NPCA mode." | As in comment. | Revised –The NPCA STA is now defined as a STA that has enabled NPCA operation.TGbn editor to make changes marked with CID 785 found in 11-25-0996r1. |
| 2144 | Vishnu Ratnam | 37.10 | 78.47 | Suggest to change the name of "NPCA Operation Information Present" field to "NPCA Enabled" field. This is also consistent with the other fields in the UHR Capabilities element. | As in comment. | Accepted –TGbn editor to make changes marked with CID 2144 found in 11-25-0996r1. |
| 2676 | Xiaofei Wang | 37.10. | 37.28 | inconsistence in definition for DPS AP and NCPA AP. A DPS AP needs to have DPS enabled to be called a DPS AP, however, an NPCA AP only needs to support NPCA capabilities, and do not need to have NPCA enabled. It is better to be consistent in definitions. | as in comment | Revised –The NPCA STA is now defined as a STA that has enabled NPCA operation.And the “NPCA Operation Parameters field” is also defined in subclause 9.4.1, as the way that the “DPS Parameters field” is defined in D0.3.TGbn editor to make changes marked with CID 2676 found in 11-25-0996r1. |
| 246 | Yuxin LU | 37.10 | 78.22 | It is not clear in which container a non-AP NPCA STA announce its NPCA enablement/disablement and further, parameters with update | Suggest to describe the container, such as via Action frame to dynamically enable and disable NPCA, or update parameters | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 246 found in 11-25-0996r1. |
| 914 | Mikael Lorgeoux | 37.10 | 78.21 | The procedure and signaling to enable/disable the NPCA mode between a NPCA AP and a non-AP NPCA STA is not defined | Specify the NPCA enablement and disablement procedure and signaling. | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 914 found in 11-25-0996r1 |
| 1209 | Morteza Mehrnoush | 37. 10 | 78.21 | Similar to other feature the STA should be able to enable/disable the NPCA. | Resolve TBD for enablement/disablement by defining the frame exchange and signaling. | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 1209 found in 11-25-0996r1 |
| 1215 | Morteza Mehrnoush | 37. 10 | 78.36 | For non-AP STA, management frame (UHR OMN frame) for enablement/disablement should be used to carry the NPCA switching and switch back delay | Address the TBD based on the comment | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 1215 found in 11-25-0996r1 |
| 1507 | Dongju Cha | 37.10 | 78.20 | How to enable/disable the NPCA operation need to be defined on non-AP STA side | 1. Which frame to use - E.g., non-AP NPCA STA can its NPCA mode in request/notification frame along w/ NPCA related parameters (NPCA Switching Delay, NPCA Switching Back Delay, etc)2. Condition of non-AP NPCA STA to enable its operation of NPCA need to be defined - E.g., non-AP NPCA STA can enable only if NPCA AP enables NPCA mode | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 1507 found in 11-25-0996r1 |
| 2139 | Vishnu Ratnam | 37.10 | 78.21 | The spec needs to define the mechanism for a non-AP STA to enable/disable NPCA operation or update its NPCA parameters. | The commentor will bring a contribution to resolve the issue. | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 2139 found in 11-25-0996r1 |
| 2140 | Vishnu Ratnam | 37.10 | 78.27 | The spec needs to define the mechanism for an AP to enable/disable NPCA operation or update its NPCA parameters. | The commentor will bring a contribution to resolve the issue. | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 2140 found in 11-25-0996r1 |
| 3408 | Gaurang Naik | 37.10 | 78.20 | Define a procedure for the NPCA AP to enable/disable the NPCA mode. When the AP transitions from the NPCA disabled to the NPCA enabled mode, the non-AP STA can start switching the NPCA primary channel to perform NPCA operations. Similarly, when the AP transitions from the NPCA disabled to the NPCA enabled mode, the non-AP STA must not switch to the NPCA primary channel. The UHR AP must provide sufficient time to the non-AP STA to react to necessary changes so that it can operate efficiently. | As in comment. | Revised –The STAs that support NPCA operation shall follow the generic mode enablement and parameter update procedures.TGbn editor to make changes marked with CID 3408 found in 11-25-0996r1 |

# Text to be adopted begins here:

### 3.1 Definitions

**9.4.1.aa1 NPCA Operation Parameters field (#2676)**

The NPCA Operation Parameters field is defined in Figure 9-aa1 (NPCA Operation Parameters field format)

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|  | B0 B7 | B8 B11 | B12 B17 | B18 B23 | B24 B25 | B26 | B27 | B28 B31 | B32 B47 |
|  | NPCA Primary Channel | NPCA Minimum Duration Threshold | NPCA Switching Delay | NPCA Switch Back Delay | Initial NPCA QSRC | MOPLEN NPCA | NPCA Disabled Subchannel Bitmap Present | Reserved | NPCA Disabled Subchannel Bitmap |
| Bits: | 8 | 4 | 6 | 6 | 2 | 1 | 1 | 4 | 0 or 16 |

**Figure 9-aa1 NPCA Operation Parameters field format**

***TGbn editor: please move the following paragraphs from subclause 9.4.2.aa1 in D0.2 to subclause 9.4.1.aa1.***

***TGbn editor: please update the following paragraphs as shown below:***

**9.4.2.aa1 UHR Operation Element**

The NPCA Enabled field **(#2144)** indicates whether NPCA operation is enabled at the AP transmitting this field and whether the NPCA Operation Parameters field is present in the UHR Operation Information field. The NPCA Enabled field **(#2144)** is set to 1 to indicate that NPCA operation is enabled and that the NPCA Operation Parameters field is present in the UHR Operation Information field, and set to 0 otherwise. The NPCA Enabled field **(#2144)** is set to 0 to indicate that NPCA operation is not enabled and that the NPCA Operation Parameters field is not present in the UHR Operation Information field.

The format of the NPCA Operation Parameters field is defined in Figure 9-aa1 (NPCA Operation Parameters field format)in subclause 9.4.1.aa1.**(#2676)**

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***TGbn editor: please update the following paragraphs as shown below:***

### 37.10 Non-primary channel access (NPCA)

A STA that has dot11NPCAOptionImplemented equal to true and supports NPCA operation shall set the NPCA Supported field of the UHR MAC Capabilities Information field of the UHR Capabilities element to 1. A STA that has enabled NPCA opearation is called an NPCA STA. An AP that has enabled NPCA operation is called an NPCA AP. **(#435, 785, 2676)**A non-AP STA may enable the NPCA mode unless it is associated with an NPCA AP.

A STA that supports NPCA operation and intends to enable, disable or update the parameters of the NPCA mode shall follow the procedure defined in defined in 37.27 (Procedure for operating mode and parameter updates) if the STA is a non-AP STA or 37.28 (Enhanced BSS parameter critical update procedure) if it is an AP. **(#246, 914, 1209, 1215, 1507, 2139, 2140, 3408)**

An NPCA AP that has an operating bandwidth less than TBD (but either 80 or 160 MHz) shall not enable NPCA operation. An AP of a multiple BSSID set which enables NPCA operation shall indicate the same NPCA primary channel as all of the other APs of the same multiple BSSID set which have enabled NPCA operation.

# Text to be adopted ends here.

**References:**