IEEE P802.11
Wireless LANs

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| Comment Resolutions for 11be D3.0 TXVECTOR/RXVECTOR Parameters – Part II |
| Date: 2023-03-11 |
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Abstract

This submission provisions with resolutions to the following 1 CIDs for clause 36.2.2 regarding TXVECTOR and RXVECTOR parameters in IEEE P802.11be D3.0 in WG LB 271, including suggested spec text modification to IEEE P802.11be D3.0 to TGbe editor:

* CID 17179

Revisions:

* R0: comment resolutions initial draft
* R1: updated resolution based on discussion with the PHY group.

Interpretation of a Motion to Adopt

A motion or majority supported straw poll to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbe Draft. When the baseline spec draft is an unapproved version, a majority supported straw poll to approve this submission means that the editing instructions and any changed or added material are actioned in the unapproved TGbe Draft. This introduction is 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).***

***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.***

***Comments for sub-clause 36.2.2 (pg329): 5 comments***

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| **CID** | **Pg/Ln** | **Clause** | **Comment** | **Proposed Changed** | **Resolution** |
| 17179 | 673.33 | 36.2.2 | What is the relationship between INACTIVE\_SUBCHANNELS in TXVECTOR and DISABLED\_CHANNEL\_BITMAP in PHYCONFIG\_VECTOR? For static punturing, should they always be the same or are they allowed to be different? (e.g. TXVECTOR can specify additional puncturing to what is specified in PHYCONFIG\_VECTOR?) What should be specified to make sure they are consistent? | Clarify | **Revised****Instruction to TGbe Editor**Please implement the proposed modification as in <https://mentor.ieee.org/802.11/dcn/23/11-23-0742-02-00be-cr-d3-0-txvector-rxvector-parameters-part2.docx>. |
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**Discussion:**

Agree with the comment that the PHY CONFIG\_VECTOR parameter “DISABLED\_SUBCHANNEL\_BITMAP” is used for long-term semi-static puncturing in a BSS, while the TXVECTOR parameter “INACTIVE\_SUBCHANNELS” is used for dynamic PPDU puncturing which indicates extra punctured 20 MHz sub-bands based on “DISABLED\_SUBCHANNEL\_BITMAP” as defined in sub-clause 35.2.1.1 (Bandwidth signaling, p473/l48), sub-clause 35.2.1.2.3 (Non-AP STA behavior, p477/l53), sub-clause 35.15.2 (Preamble puncturing operation, p644/l16). Besides, there’re other two terms related to puncturing information, “Disabled Subchannel Bitmap subfield” and “dot11EHTDisabledSubchannelBitmap”. The spec should clarify the relationship between these parameters.

Both “DISABLED\_SUBCHANNEL\_BITMAP” and “INACTIVE\_SUBCHANNELS” come from “Disabled Subchannel Bitmap subfield” exchanged most recently. “Disabled Subchannel Bitmap subfield” is used to indicate the EHT BSS puncturing status. It's sent by an EHT AP while received by EHT Non-AP STAs. An EHT AP sends the "Disabled Subchannel Bitmap subfield" and should set its own PHY CONFIG\_VECTOR parameter "DISABLED\_SUBCHANNEL\_BITMAP" to the same value as "Disabled Subchannel Bitmap subfield" it sends most recently. When an EHT Non-AP STA receives the "Disabled Subchannel Bitmap subfield" in one of the management frames from its associated AP, the Non-AP STA should issue PHYCONFIG.request(PHY CONFIG\_VECTOR) and set the "DISABLED\_SUBCHANNEL\_BITMAP" as the value of the "Disabled Subchannel Bitmap subfield" it receives most recently. In both cases, PHY will store the value of "DISABLED\_SUBCHANNEL\_BITMAP" in "dot11EHTDisabledSubchannelBitmap" for PHY/RF operation.

In 11be D3.0, the relationship between INACTIVE\_SUBCHANNELS and Disabled Subchannel Bitmap subfield is clearly clarified at P477/L52 in sub-clause 35.2.1.2.3 (Non-AP STA behavior), P644/L16 and P644/L42 in sub-clause 35.15.2 (Preamble puncturing operation). While the relationship between DISABLED\_SUBCHANNEL\_BITMAP and Disabled Subchannel Bitmap subfield is only implied at P868/L03 and the text is not correct. So it’s suggested to explicitly clarify the relationship between DISABLED\_SUBCHANNEL\_BITMAP and Disabled Subchannel Bitmap subfield when DISABLED\_SUBCHANNEL\_BITMAP is firstly introduced in sub-clause 36.2.4. For example, modify current text in sub-clause 36.2.4 to:

“The PHYCONFIG\_VECTOR carried in a PHY-CONFIG.request primitive for an EHT PHY contains a DISABLED\_SUBCHANNEL\_BITMAP parameter, which carries the value of the Disabled Subchannel Bitmap subfield in an EHT Operation element and identifies the 20 MHz subchannels that are punctured in an EHT BSS. The PHY shall set dot11EhtDisabledSubchannelBitmap to the value of this parameter.”

Besides, "dot11EHTDisabledSubchannelBitmap"is a dynamic PHY MIB parameter as defined in Table 36-69 (P903/L61), and is used for PHY to record the static puncturing information, as implied by "The PHY shall set dot11EhtDisabledSubchannelBitmap to the value of this parameter" ("dot11EhtDisabledSubchannelBitmap" should be "dot11EHTDisabledSubchannelBitmap" here) at P684/L49 in sub-clause 36.2.4 (PHY CONFIG\_VECTOR). But it’s incorrectly defined as a “read-only” parameter in Annex C.3 (P951/L57, P958/L32).

Furthermore, following are the incorrect descriptions or typos related to those parameters:

* At P164/L14 and P164/L21, "Disallowed Subchannel Bitmap subfield" should be "Disabled Subchannel Bitmap subfield"
* At P684/L49, "dot11EhtDisabledSubchannelBitmap" should be "dot11EHTDisabledSubchannelBitmap"
* At P958/L34, “read-only” should be “read-write”.
* At P958/L36, in the "DESCRIPTION" section, it states "This attribute specifies the Disabled Subchanel Bitmap subfield..." which sounds like the Disabled Subchannel Bitmap subfield is defined by this MIB parameter. It may be correct for an EHT AP, but not correct for an EHT Non-AP STA. It’s suggested to change “specifies” to “indicates”.
* At P868/L02, the text "… is determined by the Disabled Subchannel Bitmap subfield in the EHT Operation element defined in 9.4.2.311 (EHT Operation element) and signaled to the PHY via the DISABLED\_SUBCHANNEL\_BITMAP parameter in the PHYCONFIG\_VECTOR” is not correct. The puncturing pattern should be decided by INACTIVE\_SUBCHANNELS which indicates extra punctured 20 MHz sub-bands along with what’s defined in DISABLED\_SUBCHANNEL\_BITMAP. It’s suggested to change to “… is determined by the TXVECTOR parameter INACTIVE\_SUBCHANNELS.”

***TGbe Editor: please implement following proposed modification to IEEE P802.11be D3.0 as part of resolution to CID 17179.***

At P164/L14, “The ~~Disallowed~~ Disabled Subchannel Bitmap subfield indicates the 20 MHz subchannels and the 242-tone RUs that are present in HE sounding NDPs announced by the HE NDP Announcement frame and the 242-tone RUs that are to be included in requested sounding feedback.”

At P164/L21, “The lowest numbered bit of the ~~Disallowed~~ Disabled Subchannel Bitmap subfield corresponds to the 20 MHz subchannel that lies within the BSS bandwidth and that has the lowest frequency of the set of all 20 MHz subchannels within the BSS bandwidth. Each successive bit in the bitmap corresponds to the next higher frequency 20 MHz subchannel.”

At P684/L46, “The PHYCONFIG\_VECTOR carried in a PHY-CONFIG.request primitive for an EHT PHY contains a DISABLED\_SUBCHANNEL\_BITMAP parameter, which carries the value of the Disabled Subchannel Bitmap subfield in an EHT Operation element and identifies the 20 MHz subchannels that are punctured in an EHT BSS. The PHY shall set ~~dot11EhtDisabledSubchannelBitmap~~dot11EHTDisabledSubchannelBitmap to the value of this parameter.”

At P868/L02, “The puncturing pattern in an EHT TB PPDU and non-HT duplicated PPDU is determined by the ~~Disabled Subchannel Bitmap subfield in the EHT Operation element defined in 9.4.2.311 (EHT Operation element) and signaled to the PHY via the DISABLED\_SUBCHANNEL\_BITMAP parameter in the PHYCONFIG\_VECTOR~~TXVECTOR parameter INACTIVE\_SUBCHANNELS.”

At P958/32

“dot11EHTDisabledSubchannelBitmap OBJECT-TYPE
SYNTAX Unsigned32 (0..65535)
MAX-ACCESS ~~read-only~~ read-write
STATUS current
DESCRIPTION
"This is a status variable.
It is written by the PHY. This attribute ~~specifies~~indicates the Disabled Subchannel Bitmap subfield that is a 16-bit bitmap where the lowest numbered bit corresponds to the 20 MHz subchannel that lies within the BSS bandwidth and that has the lowest frequency of the set of all 20 MHz subchannels within the BSS bandwidth. Each successive bit in the bitmap corresponds to the next higher frequency 20 MHz subchannel. A bit in the bitmap is set to 1 to indicate the corresponding 20 MHz subchannel is punctured and set to 0 to indicate the corresponding 20 MHz subchannel is not punctured."”

------------------------ ***End of proposed changes for Table 36-1 -------------------------------------------***

**References:**

1. **IEEE P802.11be/D3.0, Feb 2023.**