IEEE P802.11
Wireless LANs

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| LB225 CR Sub-clause 27.6.4 |
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Abstract

This submission proposes resolutions of comments received from TGax LB225.

(The proposed change is based on TGax Draft 1.0.)

* CIDs: 8501, 8717, 8718, 8719, 9086, 9604, 9930, 10071 (8 CID)

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 TGax Draft. This introduction is not part of the adopted material.

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

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

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 8501 | 179.14 | 27.6.4 | "An HE STA shall transmit an HE NDP using the following TXVECTOR parameters" The shall statement is not necessary. An NDP is by definition a HE SU PPDU with a certain format so the statement needs to be descriptive. | Change to read: "The TXVECTOR parameters for an HE NDP are as follows: - FORMAT is HE\_SU; - HE\_LTF\_TYPE is either 2x HE LTF or 4x HE-LTF; - NUM\_STS indicates two or more space-time streams; etc." | Revised- Agree in principal. Remove the unnecessary shall statement. TGax editor makes changes as shown in the as specified in 11-17/0046r0. |
| 8717 | 179.31 | 27.6.4 | "Beamformee STS Capability field" is not defined. Use "Beamformee STS" field instead. Also note that this fields may have different values for BW<=80 and BW>80. | See comment | Revised- Agree in principal. Instead of Beamformee STS Capability field, Beamformee STS For <= 80 MHz field and Beamformee STS For > 80 MHz field are used. TGax editor makes changes as shown in the as specified in 11-17/0046r0. |
| 8718 | 179.37 | 27.6.4 | Change "destination of an HE NDP" to "RA of an HE NDP" | See comment | Rejected-Because an HE NDP frame does not have the RA field, the corresponding sentence clarifies that the destination of an HE NDP frame is equal to the RA of the immediately preceding HE NDP Announcement frame.FYI, the same sentence is used for VHT NDP frame.  |
| 8719 | 179.37 | 27.6.4 | Change "source of an HE NDP" to "TA of an HE NDP" | See comment | Rejected-Because an HE NDP frame does not have the TA field, the corresponding sentence clarifies that the source of an HE NDP frame is equal to the TA of the immediately preceding HE NDP Announcement frame.FYI, the same sentence is used for VHT NDP frame. |
| 9086 | 179.19 | 27.6.4 | NUM\_STS indicates two or more space-time streamsDoes this mean NSTS 1 with CQI mode is not possible? | Clarification required, change wording if NSTS 1 with CQI mode is possible | Revised- When the Feedback Type field in HE MIMO Control field of the preceding HE NDP Announcement frame is set to CQI, the NUM\_STS parameter of an HE NDP frame can be set to 1. TGax editor makes changes as shown in the as specified in 11-17/0046r0. |
| 9604 | 179.15 | 27.6.4 | The TXVECTOR parameter TXOP\_DURATION of an HE NDP should be described as well. | As per comment. | Revised- Agree in principal. The TXOP\_DURATION parameter of an HE NDP frame is set to either all 1s or a value derived from the Duration field in the MAC header of the preceding HE NDP Announcement from the HE NDPA. In such case, the BSS\_COLOR parameter should be described as well.TGax editor makes changes as shown in the as specified in 11-17/0046r0. |
| 9930 | 179.37 | 27.6.4 | By definition there's no PSDU in an NDP frame. Therefore, there's no TA/RA/SA/DA for the NDP frame. I don't understand what does "destination" or "source" of an HE NDP imply in these two sentences. Considering spec. text shown in baseline spec., these two sentences do not have any information. | Delete the last two paragraphs in 27.6.4. | Rejected- The corresponding sentence clarifies that the source and the destination of an HE NDP frame can be implicitly known from the immediately preceding HE NDP Announcement frame. |
| 10071 | 179.24 | 27.6.4 | 4x HE-LTF and 0.8us has been introduced in the spec in order to make sure the channel estimation accuary with small delay spread for MIMO or MU-MIMO scenarios. TXVECTOR parameter in HE NDP should include GI\_TYPE set to 0.8 when HE\_LTF\_TYPE is set to 4x HE-LTF | GI\_TYPE set to either 0.8 us or 1.6 us when HE\_LTF\_TYPE is set to 2x HE-LTF; otherwiseGI\_TYPE set to either 0.8us or 3.2 us. | Rejected- It is not desirable to have too many optional HE NPD modes.  |

**27.6.4 HE NDP transmission**

***TGax editor: change the sub-clause 27.6.4 as the following:***

~~An HE NDP shall use the HE SU PPDU format as described in 26.1.4 (PPDU formats). An HE STA shall transmit an HE NDP using the following TXVECTOR parameters:~~ The TXVECTOR parameters for an HE NDP are as follows:

— FORMAT set to HE\_SU

— APEP\_LENGTH set to 0

— HE\_LTF\_TYPE set to either 2x HE-LTF or 4x HE-LTF

— NUM\_STS indicates two or more space-time streams when the Feedback Type field in HE MIMO Control field of the preceding HE NDP Announcement frame is set to either SU or MU; otherwise, NUM\_STS is set to any value (#9086)

— CH\_BANDWIDTH set to the same value as the TXVECTOR parameter CH\_BANDWIDTH in the preceding HE NDP Announcement frame

— GI\_TYPE set to either 0.8 us or 1.6 us when HE\_LTF\_TYPE is set to 2x HE-LTF; otherwise GI\_TYPE set to 3.2 us

— PE\_DURATION set to 4 us

— SPATIAL\_REUSE set to SR disallowed

— BSS\_COLOR set to the value indicated in the BSS Color subfield of the HE Operation element received or transmitted from the HE AP (#9604)

— TXOP\_DURATION set to either 127 or a value defined in Equation (27-xx) (#9604)

 (27-xx)

where, DHE\_NDPA is the Duration field in the MAC header of the preceding HE NDP Announcement frame and TXTIME is defined in Equation (28-129).

When the TXVECTOR parameter of an HE NDP is less than or equal to 80 MHz, t~~T~~he number of space-time streams sounded and as indicated by the NUM\_STS parameter shall not exceed the value indicated in the Beamformee STS For $\leq $ 80 MHz ~~Capability~~ field in the HE Capabilities element of any intended recipient of the HE NDP. When the TXVECTOR parameter of an HE NDP is greather than 80 MHz, the number of space-time streams sounded and as indicated by the NUM\_STS parameter shall not exceed the value indicated in the Beamformee STS For $>$ 80 MHz field in the HE Capabilities element of any intended recipient of the HE NDP. (#8717) The NUM\_STS parameter may be set to any value, subject to the constraint of the previous sentence, regardless of the value of the Supported HE-MCS and NSS Set field of the HE Capabilities element at either the transmitter or recipient of the HE NDP.

The destination of an HE NDP is equal to the RA of the immediately preceding HE NDP Announcement frame.

The source of an HE NDP is equal to the TA of the immediately preceding HE NDP Announcement frame.