IEEE P802.11
Wireless LANs

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| Proposed resolution to CID 2335 to 2344 |
| Date: 2022-2-15 |
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Abstract

This submission proposes resolutions to CID 2335 to 2344, related to sounding or beamforming.

* CID: 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344

Baseline documents: TGme D1.0.

Revisions:

* Rev 0: Initial version of the document. Use D1.0 as baseline spec text.

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

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

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

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| **CID** | **Clause Number** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 2337 | 9.3.1.19 | 938 | 38 | HE NDP Announcement frame is MAC frame. Need to add the PPDU carrying the frame to use the bandwidth of the frame/PPDU. | Find "the bandwidth of the HE NDP Announcement frame" and replace it to "the bandwidth of the PPDU carrying the HE NDP Announcement frame " | **Revised:**Replace “the bandwidth of the HE NDP Announcement frame” in P983L38, P983L44, P983L50, P983L55, P983L60, P983L63, P4192L34, P4192L41, P4197L46, and P4198L6 (10 cases) with “the bandwidth of the PPDU carrying the HE NDP Announcement frame”  |
| 2338 | 9.3.1.19 | 985 | 1 | There is no "Feedback Type" subfield. It should be "Feedback Type And Ng" subfield. | Replace "Feedback Type subfield" with "Feedback Type And Ng subfield" in line 1 and 4 in page 985. | **Accepted** |
| 2339 | 9.4.1.64 | 1147 | 38 | The Nc Index subfield indicates the number of columns minus one. | Replace "If the Feedback Type subfield indicates SU or MU, the Nc Index subfield indicates the number of columns, Nc, in the compressed beamforming feedback matrix and is set to Nc - 1.If the Feedback Type subfield indicates CQI, the Nc Index subfield indicates the number of space time streams, Nc, in the CQI Report and is set to Nc - 1."with"If the Feedback Type subfield indicates SU or MU, the Nc Index subfield indicates the number of columns in the compressed beamforming feedback matrix minus 1, Nc - 1.If the Feedback Type subfield indicates CQI, the Nc Index subfield indicates the number of space time streams in the CQI Report minus 1, Nc - 1." | **Accepted** |
| 2340 | 9.4.1.64 | 1147 | 45 | The Nr Index subfield indicates the number of rows minus one. | Replace "If the Feedback Type subfield indicates SU or MU, then the Nr Index subfield indicates the number of rows, Nr, in the compressed beamforming feedback matrix and is set to Nr - 1."with"If the Feedback Type subfield indicates SU or MU, then the Nr Index subfield indicates the number of rows minus 1 in the compressed beamforming feedback matrix, Nr - 1." | **Accepted** |
| 2341 | 9.4.1.65 | 1149 | 50 | Add b\_{/phi} | Replace "The angles are quantized as defined in Table 9-102 (Quantization of angles) with b\_psi defined by the Codebook Information field of the HE MIMO control field"with"The angles are quantized as defined in Table 9-102 (Quantization of angles) with b\_psi and b\_phi defined by the Codebook Information field of the HE MIMO control field" | **Accepted** |
| 2342 | 10.23.2.8 | 2215 | 56 | Need to add "SIFS" after "BFRP Trigger frame" | Add "after SIFS" between "followed" and "by HE TB PPDUs." | **Accepted** |
| 2343 | 26.7.3 | 4195 | 32 | Add TB PPDU carrying compressed beamforming/CQI frame. | Replace "Each HE beamformee responds after a SIFS with an HE Compressed Beamforming/CQI frame."with"Each HE beamformee responds after a SIFS with an HE TB PPDU containing one or more HE Compressed Beamforming/CQI frame. BFRP Trigger frames sent within an HE TB sounding sequence shall solicit HE TB PPDUs. | **Accepted** |
| 2344 | 9.3.1.19 | 985 | 1 | The Nc Index subfield indicates the number of columns minus one. | Replace"-- If the Feedback Type subfield indicates SU or MU, the Nc subfield indicates the number of columns, Nc, in the compressed beamforming feedback matrix and is set to Nc - 1-- If the Feedback Type subfield indicates CQI, the Nc subfield indicates the number of space-time streams, Nc, in the CQI report and is set to Nc - 1"with"-- If the Feedback Type subfield indicates SU or MU, the Nc subfield indicates the number of columns in the compressed beamforming feedback matrix minus one, Nc - 1-- If the Feedback Type subfield indicates CQI, the Nc subfield indicates the number of space-time streams in the CQI report minus one, Nc - 1" | **Accepted** |

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| **CID** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 2335 | 9.4.1.49 | 1127 | Add the dimension of the matrix V. | Modify Page 1127 L30-32 as follows:Each SNR corresponds to the predicted SNR at the beamformee when the beamformer applies all columns of the NrxNc feedback matrix V. | **Accepted** |

**Discussion**: A dimension of the matrix V for SNR computation is important for proper scaling. To be super clear, propose to add dimension of matrix V.

Page 1127, line 24-line 32.



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| **CID** | **Clause Number** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 2336 | 9.3.1.19 | 983 | Other than HE, Nc Index subfield is used. Nc Index is Nc - 1. As HE uses Nc subfield instead of Nc Index, it is a bit confusing whether the subfield indicates Nc or Nc - 1. | Change Nc subfield in HE NDP Announcement frame to Nc Index subfield (e.g. in figure 9-81). Accordingly, change Nc subfield in the text to Nc Index subfield. | **Revised**:Agreed. *Adopt proposed change #1 and #2 in doc 11-22/0344r0.* |

**Discussion**: Nc subfield is used in HE while others, e.g. VHT, EHT, etc, use Nc Index subfield. As Nc subfield indicates Nc – 1, it will be better to have different name than Nc.

***Proposed Change #1***

*Replace figure 9-81 with follow,*

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|  | B0           B10 | B11          B24 | B25        B26 | B27 | B28 | B29        B31 |
|  | AID11 | Partial BW Info | Feedback Type And Ng | Disambiguation | Codebook Size | Nc Index |
| Bits: | 11 | 14 | 2 | 1 | 1 | 3 |
| * STA Info field format in an HE NDP Announcement frame if the AID11 subfield is not 2047(11ax)
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***Proposed Change #2***

***Replace “Nc subfield” in P985L1, P985L4, P985L9, P4197L12, P4197L25, P4199L2, and P4199L6 (7 cases) with “Nc Index subfield”.***