IEEE P802.11
Wireless LANs

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| LB 205 Comment Resolution for Clause 24 sections |
| Date: 2015-01-06 |
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Abstract

This submission proposes resolutions for comments in Clause 24 of TGah Draft 3.0 with the following CIDs:

* 5144, 5146, 5148, 5152, 5153, 5155, 5156, 5157
* 5347
* 5367
* 5397
* 5423
* 5424
* 5432
* 5433
* 5434
* 5468

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

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

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

## Comment Resolutions for Clause 24 CIDs from Eugene Baik

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 5144 | 397.33 | 24.3.4.3.1 | Replace "requestedchannel" with "requested channel" throughout the draft. | As in comment | AcceptedInstruction to Editor: Please do a global search and replace of “requestedchannel” with “requested channel” throughout the draft. |
| 5146 | 482.14 | 24.3.18 | Where are the cases of non-A-MPDUs? Either add the other case (AGGR = 0) or simply remove the reference to A-MPDU Including EOF padding from these figures. | As in comment | RevisedInstruction to Editor: Please change the text “A-MPDU including EOF padding” to “MPDU or A-MPDU (including EOF padding, if applicable)” in Figure 24-27, Figure 24-28, and Figure 24-29. |
| 5148 | 500.22 | 24.5 | For the MCS table for 1MHz, Nss=1 (Table 24-38), should clarify that when LDPC is used for MCS10, the value for N\_cbps numbers should be 12, to stay consistent with N\_cbps used in the equations for LDPC encoding procedure. This is because Rep2 coding comes after LDPC encoding is completed. | As in comment | Revised.Agree with comment in principle.Instruction to Editor. Prior to Table 24-38, add the following text: “NOTE – When LDPC is used with MCS 10, the resulting N\_cbps is 12 because the 2x repetition is applied after the LDPC encoding procedure.” |
| 5152 | 461.17 | 24.3.11 | Should add a sentence to clarify that 1 and 2MHz MAC NDPs must be duplicated up to their final transmission bandwidth (i.e. CBW) | As in comment | Revised.Instruction to Editor: Please see editing instructions in 11-15/0017r0. |
| 5153 | 455.43 | 24.3.9.10 | For Equation 24-49, for the lower 8MHz, indices should be 0<= l <= 7; for the upper 8MHz, it should be 8<= l <= 15 | As in comment | Accepted.The “less than” (<) should be “less than or equal to” (<=).Instruction to Editor: For Equation 24-49, please change 0 <= l < 7 to 0<= l <= 7, and 8 <= l < 15 to 8 <= l <= 15. |
| 5155 | 459.30 | 24.3.9.12.2 | In Equations 24-59 and 24-60, the Tone Scaling factors for 2MHz duplicate transmissions is incorrect. | Fix tone scaling factors in equations to use values for 2MHz duplicate data. | Accepted.Equation should use 2MHz Duplicate Data tone scaling factor, not 1MHz Duplicate Data tone scaling factor.Instruction to Editor: In Equations 24-59 and 24-60, please change the term N^{Tone}\_{1MHz\_DUP\_Data} to:N^{Tone}\_{2MHz\_DUP\_Data} |
| 5156 | 396.04 | 24.3.4 | Add text and necessary equations in 24.3.4 to define how duplicate mode preambles are constructed for 1 and 2MHz, and how CBW is used. Current text only describes how non-duplicate preambles are constructed. | As in comment | Revise.Instructions to Editor: Please see editing instructions in 11-15/0017r0. |
| 5157 | 398.56 | 24.3.4.2.6 | Step i) in 24.3.4.2.6 says insert the SIG-B Pilot following steps described in 24.3.9.10. However, in 24.3.8.2.2.2.4 it says to follow 22.3.10.10 | Fix text to refer to section 24.3.9.10 | Revise.Appropriate section to refer to is 22.3.10.10Instruction to Editor: Change text to “Insert pilots following the steps described in 22.3.10.10 (Pilot subcarriers).” |

### Editing Instructions for CID 5152

* S1G preamble format for NDPs

An NDP may be used for sounding or for NDP CMAC(#3027) frames. In the case of NDP sounding, the SIG field in an NDP shall indicate multiple space-time streams and more than one LTF fields; NDP CMAC(#3027) frames only contain single space-time stream with one LTF field.

NDP is the only S1G sounding format.

NDP for sounding is defined only using the S1G\_SHORT, and NDP for sounding is not allowed for 1 MHz transmissions. NDP CMAC(#3027) frames may either use an S1G\_SHORT, or an S1G\_1M.

The format of an S1G NDP PPDU for sounding is shown in Figure 24-17 (S1G NDP for Sounding Format).

|  |  |  |  |
| --- | --- | --- | --- |
| 2 symbols | 2 symbols | 2 symbols | 1 symbol per LTF |
| STF | LTF1 | SIG | LTF2 ~ LTFNLTF |
| * S1G NDP for Sounding Format
 |

NOTE—The number of LTF symbols in the NDP is determined by the NSTS subfield in SIG field.

Transmission of an S1G NDP PPDU for sounding shall comply with the following rules:

* shall use the S1G PPDU format but without the Data field
* shall use the S1G\_SHORT
* shall use the following settings in SIG field:
* MCS field is set to 0
* Length/Duration field is set to 0
* Bandwidth field is set to the same value as the TXVECTOR parameter CH\_BANDWIDTH in the preceding S1G NDP Announcement frame.
* NSTS field indicates two or more space-time streams
* Partial AID field is set as described in 9.20a (Group ID, partial AID, Uplink Indication and COLOR in S1G PPDUs)
* The NDP indication bit is set to 0

The format of an S1G NDP CMAC(#3027) frame in 2 MHz, 4 MHz, 8 MHz or 16 MHz is shown in Figure 24-18 (S1G NDP CMAC frame for 2 MHz). The > 2 MHz S1G NDP CMAC frames are 2 MHz S1G NDP CMAC frames duplicated up to the transmission bandwidth according to CH\_BANDWIDTH in TXVECTOR.

|  |  |  |
| --- | --- | --- |
| 2 symbols | 2 symbols | 2 symbols |
| STF | LTF1 | SIG |
| * S1G NDP CMAC frame for ≥ 2 MHz
 |

The format of an S1G NDP CMAC(#3027) frame in 1 MHz is shown in Figure 24-19 (S1G NDP CMAC frame for 1 MHz). S1G NDP CMAC frames for 1 MHz are duplicated up to their transmission bandwidth according to CH\_BANDWIDTH in TXVECTOR.

|  |  |  |
| --- | --- | --- |
| 4 symbols | 4 symbols | 6 symbols |
| STF | LTF1 | SIG |
| * S1G NDP CMAC frame for 1 MHz
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### Editing Instructions for CID 5156

*Instruction to Editor: Please insert new Section 24.3.4.5 Construction of Preambles for S1G\_DUP\_2M and S1G\_DUP\_1M immediately before current Section 24.3.4.5 24.3.4.5 Construction of the Data field in an S1G SU PPDU for all cases except 1 MHz MCS10.*

* Construction of Preambles for S1G\_DUP\_2M and S1G\_DUP\_1M

For S1G\_DUP\_2M and S1G\_DUP\_1M, the preambles are initially constructed according to 24.3.4.3 Construction of the Preamble part in an S1G\_SHORT PPDU and 24.3.4.4 Construction of the Preamble part in an S1G\_1M\_PPDU, respectively.

In the case of S1G\_DUP\_2M, the initial 2MHz preamble is duplicated in frequency to fill the final transmission bandwidth (i.e. 4 MHz, 8 MHz, or 16 MHz) indicated by the CH\_BANDWIDTH parameter in TXVECTOR.

In the case of S1G\_DUP\_1M, the initial 1MHz preamble is duplicated in frequency to fill the final transmission bandwidth (i.e. 2 MHz, 4 MHz, 8 MHz, or 16 MHz) indicated by the CH\_BANDWIDTH parameter in TXVECTOR.

## Miscellaneous Comment Resolutions for Clause 24 CIDs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 5347 | 371.40 | 24.1.1 | There is inconsistency regarding the support for S1G\_LONG PPDU (mandatory for > 2 MHz BWs) as stated here and in the next paragraph with that of the last paragraph that mentions that it is optional for 2, 4, 8, 16 MHz). Also an optional support for S1G LONG PPDU is specified in 9.42n (S1G\_Long operation). Please keep consistency throughout the draft for this. | As in comment. | Revise.Instruction to Editor - Replace bullet point on Page 372, Line 3 ~~“2 MHz, 4MHz, 8 MHz, 16 MHz PPDU with S1G\_LONG preamble”~~with:“S1G\_LONG preamble when maximum channel width supported is less than 4 MHz” |
| 5367 | 477.35 | 24.3.17.5.4 | Duplicate info. Remove the first sentence of the last column | As in comment. | Accept.Instruction to Editor: Please remove first sentence “The start of a 16 MHz S1G PPDU at or above –83 dBm.” |
| 5397 | 486.53 | 24.3.19 | A Group ID for an S1G MU PPDU is same as a VHT MU PPDU (Ref: 24.3.10.4 Group ID), and according to the Table 7-4 (P67L15), Group ID value of 0 is used for a frame addressed to an AP, and Group ID value of 63 is used for a frame addressed to a non-AP STA.To use the same procedure as the VHT counterpart described in 22.3.21, it is necessary to use same Group ID (GID) rule for the VHT. | Change the third bullet of the ninth paragraph as follows:-- The value of Group ID is set to: - the value of the GID field of SIG-A for an S1G MU PPDU, - 0 for an S1G SU PPDU with UPLINK\_INDICATION equal to 1, or - 63 for otherwise | Revise.Instruction to Editor: Please see editing instructions in 11-15/0017r0. |
| 5423 | 396.27 | 24.3.4.2.1 | "LONG\_GI" is being used without any priori definition. Same comment for "SHORT\_GI". | Define "LONG\_GI" and "SHORT\_GI" at its first appearance. | Revise.Instruction to Editor: In Section 24.3.4.2.1, at Page 396, Line 27, change text to “Prepend a GI of 8us in duration ~~(LONG\_GI)~~ and apply windowing as described in 24.3.7 (Mathematical description of signals).” Repeat this change for all instances of this bullet point in Section 24.3.4In Section 24.3.4.5.1, Page 404, Line 23, change text to “Prepend a GI ~~(SHORT\_GI or LONG\_GI)~~ and apply windowing as described in 18.3.2.5 (Mathematical conventions in the signal descriptions). If the GI\_TYPE parameter in TXVECTOR equals LONG\_GI, the GI duration shall be 8us. If the GI\_TYPE parameter is SHORT\_GI, the GI duration shall be 8us for the first OFDM symbol of the data field, and 4us for all subsequent OFDM symbols. ~~Note that SHORT\_GI can be applied from the 2~~~~nd~~ ~~symbol of data field.~~” Repeat this change for all instances of this bullet point in Section 24.3.4.  |
| 5424 | 399.46 | 24.3.4.3.1 | Typo: add a space in the text "requestedchannel". Similar typo at P405Ln64. | As in the comment. | Revise.CID identical to CID 5144, does not need further resolution.  |
| 5432 | 449.25 | 24.3.9.4.4.1 | The font size is not consistent with the rest of the text. Similar comment at P414Ln43, P477Ln9, and many other places. | Change the font size. | Accept.Instruction to Editor: Please change size of text to be consistent on Page 414, 449 and 477 |
| 5433 | 473.48 | 24.3.17.2 | Fill out "N/A" in the two empty blanks. | As in the comment. | Accept.Instruction to Editor: Please fill in “N/A” into the two empty boxes in Table 24-32. |
| 5434 | 489.47 | 24.3.19 | Change "S1G\_1MHz" to "S1G\_1M" | As in the comment. | Accept.Instruction to Editor: Please replace all instances of “S1G\_1MHz” to “S1G\_1M” in document. |
| 5468 | 470.55 | 24.3.16.4.2 | The phrase "If 2 MHz channelization is not permitted" is ambiguous about just what is doing the permitting. First guess is that it is the AP. | Replace "is not permitted" with "is not allowed by the AP". | Revise.Instruction to the Editor: Please modify the text to: “If 2MHz channelization is not allowed in the regulatory region of operation…” |

### Editing Instructions for CID 5397

Instructions to editor: Please make the following changes to the text on Page 486 starting on Line 46:

The PHY optionally filters out the PPDU based on the GID, MU[0-3] NSTS, UPLINK\_INDICATION and ID fields of SIG or SIG-A and the contents of the PHYCONFIG\_VECTOR. This procedure follows its VHT counterpart as described in 22.3.21 with following modifications

* “VHT SIG-A is replaced with “SIG or SIG-A”
* “Partial AID field” is replaced with “ID field”
* *g* is defined to be:
* The value of the GroupID field of the SIG-A for an S1G MU PPDU
* 0 for an S1G SU PPDU when UPLINK\_INDICATION is equal to 1
* 63, in all other cases

If the PPDU is filtered out, the PHY shall issue a PHY-RXEND.indication(Filtered) primitive.