IEEE P802.11  
Wireless LANs

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| **Resolution to PHY-related CID 21366** |
| **Date:** 2019-07-31 |

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Abstract

This submission proposes a resolution for PHY-related CID 21366 (1 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.***

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| **CID** | **Section#** | **Page#** | **L#** | **Comment** | **Proposed Change** | **Resolution** |
| **21366** | **27.3.10.8.4** | **552** | **(45)** | HE-SIG-A and HE-SIG-B common field jointly define preamble puncturing pattern. The "if and only if" condition here does not reflect that fact. | add the following text to line 45 of page 552: The preamble is punctured in a 20 MHz subchannel S1 of an HE MU PPDU if and only if it doesn't contradict the bandwidth signaling in SIG-A and one of the following conditions apply. | Revised. The commenter’s proposed direction is substantially agreed, leading to changes in 19/xxxx<motionedRevion#> |
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***Discussion***

This author agrees with the commenter that HESIGB should reflect the puncturing signaled in HESIGA. The D4.2 HESIGA language for the Bandwidth field in an HEMU PPDU is:

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| …  If the SIGB Compression field is 0:  Set to 4 for preamble puncturing in 80 MHz, where in the preamble only the secondary 20 MHz is punctured.  Set to 5 for preamble puncturing in 80 MHz, where in the preamble only one of the two 20 MHz subchannels in secondary 40 MHz is punctured.  Set to 6 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble only the secondary 20 MHz is punctured.  Set to 7 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble the primary 40 MHz is present.  … |

This author goes further than the commenter since preamble puncturing requires LSTF, LLTF, LSIG, HESIGA, HESIGB, HESTF and HELTF to be punctured (and also for no user to be allocated to that subchannel), yet these fields have already been transmitted. So saying that preamble puncturing depends on HESIGB (“The preamble is punctured in a 20 MHz subchannel S1 of an HE MU PPDU if … one of the following conditions apply”) has it backwards.

Furthermore, the definition of S2 is repeated in the sub-bullet to the first sub-bullet and the second bullet, which is inelegant. It may be better to rewrite the paragraph without using S1 or S2 at all.

***Ver2***

Updates following review.

* Removed 4,5,6 as a simple special case since 6 permits 40 MHz to be punctured too.
* RE-wrote the “otherwise” language to make it clear this works for not-just the 40 MHz case.

***TGax edior: change, wrt D4.2, as shown by Word track changes:***

If the Bandwidth field in HESIGA of an HE MU PPDU equals 4, 5, 6 or 7, then one or more 20 MHz subchannels of the preamble are punctured, as defined in Table 27-20 (HE-SIG-A field of an HE MU PPDU). For two adjacent punctured 20 MHz subchannels that comprise a 40 MHz subchannel in which a 484-tone RU is located, then B7–B0 of the RU Allocation subfields corresponding to the two 20 MHz subchannels may each be set to 01110010 (#21237) to indicate that the preamble is punctured in both the 20 MHz subchannels. Each punctured 20 MHz subchannel that does not have B7-B0 of its corresponding RU Allocation subfield set to 01110010 shall have B7-B0 of its RU Allocation subfield set to 01110001 (242-tone RU is(#21033) empty).