### IEEE P802.11 Wireless LANs

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| 11ax D1.2 MAC Comment Resolution for CID 8555 | | | | |
| Date: 2017-05-xx | | | | |
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Abstract

This submission proposes resolutions for comments of TGax Draft 1.2 with the following CIDs:

8555

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Further revision of the resolution.

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 D1.2 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax D1.2 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** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 8555 | Rojan Chitrakar | 170.36 | 27.5.2.4 | Based on the description of the subsequent paragraph, the ED based CCA considers the status of a wide band channel on a 20 MHz granularity, i.e. as long as the 20 MHz channels containing the allocated RUs are considered idle, even if the other 20 MHz channels are busy (including the primary 20 MHz), a STA is still allowed to transmit the HE trigger- based PPDU. However, the virtual CS i.e. NAV is considered over the whole wide band. Even a narrow band OBSS transmission on the primary 20 MHz channel will set the STA's Inter-BSS NAV thereby rendering all the remaining 20 MHz channels of the wide band unusable for UL MU even when the ED based CCA returns idle on those 20 MHz channels. As such, it will be beneficial to record, in addition to the duration of the Inter-BSS NAV, the busy/idle state of the 20 MHz channels other than the primary 20 MHz. If the 20 MHz channels containing the allocated RUs are considered idle by both the ED based CCA as well as the inter-BSS NAV, a STA should be allowed to transmit the HE trigger- based PPDU on the allocated RU. This will prevent a narrow band OBSS transmission from blocking the use of a wide band channel for UL MU. | When recording the inter-BSS NAV set by an inter-BSS PPDU, in addition to recording the NAV duration of the Inter-BSS PPDU, the busy/idle state of the 20 MHz channels other than the primary 20 MHz are also recorded. A STA may also keep this record in conjunction with the HE bandwidth query report operation. This allows the virtual CS to be considered on a 20 MHz granularity as well i.e. the virtual CS is considered busy on a 20 MHz channel only if the NAV counter is nonzero and the 20 MHz channel was recorded as busy when the NAV was recorded. If the 20 MHz channels containing the allocated RUs in a Trigger frame are considered idle by both the ED based CCA as well as the virtual CS, a STA is allowed to transmit the HE trigger- based PPDU on the allocated RU. | Rejected -  The commenter proposes to record busy/idle status of each 20 MHz channel for each recorded NAV. However, we note that most of the legacy packets with non-HT PHY format does not have bandwidth information associated with the PPDU. Common examples include the CTS frame and ACK/BA frame carried in non-HT PPDU. In this case, we think that the spec design will be that a STA needs to have virtual CS indicates medium busy for all 20 MHz, which is then the same as the current operation for virtual CS. As a result, the proposal will not have significant impact on performance gains when non-HT packets are used or in an environment where there are legacy devices.  Another way to address the above issue is to have additional rule for matching responding PPDU with the soliciting PPDU. However, we think these kinds of operations should be implementation specific rather than being spelled out as varioius options for matching the responding frame with the soliciting PPDU.  Recording busy/idle status of each 20 MHz channels for a NAV recording also requires STA to record separate NAV counter for each 20 MHz channel to optimize the performance or record the end time of previous NAV setting and associated bandwidth that is replaced by a longer NAV value. Note that in a 160 MHz operation scenario, the complexity may then increase by 8 times for additional optimization. The gain is not justified for this additional complexity, and the implementation of multiple NAVs for each 20 MHz channel should be implementation specific as well.  Due to these reasons, we reject this comment. |

**Discussion:** *None.*

**Propose:** *None.*