IEEE P802.11
Wireless LANs

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| Comment Resolution on PHY-CCA.indication |
| Date: 2017-05-09 |
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Abstract

This submission proposes resolutions of comments received from TGax comment collection (TGax Draft 1.0).

* CIDs: 4718, 4719, 6938, 6939, 7296, 7297 (6 CIDs)

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Minor editorial changes
* Rev 2: Rearrangement of wordings based on feedback and added clarification note at the end of Table 8.5
1. **Introduction**

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. The introduction and the explanation of the proposed changes are 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 | Page Number | Line Number | Comment | Proposed Change | Resolution |
| 4718 | 16 | 15 | The conditions in this table are becoming too cumbersome. Find a hierarchical way to categorize an HT STA that is not a VHT STA, an HE STA that is not a VHT STA and so on. And itemize the list so that it is clear which STA follows which CCA sections. Also since an HE STA can also be a VHT STA or an HT STA then it needs to be clear which rules are followed and when. | As in comment. | Revised-Agree in principle with the comment. If phrase such as “an HT STA that is not a VHT STA”, “VHT STA that is not an HE STA” etc. are used, the table will grow very big. To avoid confusion, the phrase “an HT STA that is not a VHT STA” is replaced with “an HT STA” and a NOTE is added at the end of the table to clarify the usage of the STA types in the table.TGax editor to make the changes shown in 11-17/0711r2 under all headings that include CID 4718. |
| 4719 | 15 | 01 | There are new features in 11ax that need additional updates to these clause's rules. Namely spatial reuse, preamble puncturig, UL MU, DL MU transmissions, etc. | Ensure that the clause is properly amended so that all the appropriate exceptions for a decent 11ax operatoin are added. | Accepted-Agree in principle with the comment. 11ax D1.2 already includes the additional changes required for the new 11ax features. |
| 6938 | 16 | 20 | The differences between the VHT and HE channel-list element behavior seems to be very minimal should this table call out different rules for VHT and HE? It seem very redundnat specification wise to duplicate large portions of the VHT PHY clause in the HE PHY clause. Wouldn't it be more efficient to make the small additions in the HE PHY clause and reference the VHT PHY clause. | Consider removing the duplicate specifications in the VHT and HE PHY clauses. | Rejected-The HE PHY clauses that have been added addresses specific features added in 11ax e.g. preamble puncturing, Per20MHzbitmap etc. and as such they are different from the VHT PHY clauses and cannot be removed. |
| 6939 | 17 | 13 | In the base specification there is a Note that is part of the first paragraph which states: "NOTE--For the VHT PHY, the timing information is omitted here and is defined in 21.3.18.5 (CCA sensitivity)." If the intent was to remove the note it should be stated clearly that the note was removed. If the note is remaining, then it should be updated to include the timing information location for the HE PHY. | Either clarify that the Note is being removed or update the Note to include the HE PHY. | Revised-Agree in principle with the comment. The first paragraph already contains sentences that refer to specific PHY clauses for CCA behaviour. Instructions to the editor to remove the Note has been added.TGax editor to make the changes shown in 11-17/0711r2 under all headings that include CID 6939. |
| 7296 | 16 | 43 | Is the sentence "Indicates that the secondary 40 MHz channel is busy according to the rules specified in 21.3.18.5.4" applied to HE STA too? | If no, then change the sentence to "In a VHT STA, indicates that the secondary 40 MHz channel is busy according to the rules specified in 21.3.18.5.4". | Accepted-Agree in principle with the comment. The referred line is only applicable to VHT STAs.TGax editor to make the changes shown in 11-17/0711r2 under all headings that include CID 7296. |
| 7297 | 16 | 53 | Is the sentence "Indicates that the secondary 80 MHz channel is busy according to the rules specified in 21.3.18.5.4" applied to HE STA too? | If no, then change the sentence to "In a VHT STA, indicates that the secondary 80 MHz channel is busy according to the rules specified in 21.3.18.5.4". | Accepted-Agree in principle with the comment. The referred line is only applicable to VHT STAs.TGax editor to make the changes shown in 11-17/0711r2 under all headings that include CID 7297. |
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**Discussion:** None

**Propose:**

Revised for CIDs 4718, 6939, 7296, 7297 as per discussion and editing instructions in 11-17/0711r2.

8.3.5.12 PHY-CCA.indication

8.3.5.12.2 Semantics of the service primitive

***TGax editor: Change Table 8-5(The channel-list parameter elements) as follows******(CID# 4718, 7296, 7297) and add a NOTE at the end of Table 8-5(The channel-list parameter elements)(CID# 4718):***

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| * **The channel-list parameter elements**
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| **channel-list element** | **Meaning** |
| primary | In an HT STA ~~that is not a VHT STA~~, indicates that the primary 20 MHz channel is busy. (#4718)In a VHT STA, indicates that the primary 20 MHz channel is busy according to the rules specified in 21.3.18.5.3 (CCA sensitivity for signals occupying the primary 20 MHz channel).In a TVHT STA, indicates that the primary channel is busy according to the rules specified in 22.3.18.6.3 (CCA sensitivity for signals occupying the primary channel).In an HE STA, indicates that the primary 20 MHz channel is busy according to the rules specified in 28.3.17.6.3 (CCA sensitivity for the primary 20 MHz channel(#Ed)). |
| secondary | In an HT STA ~~that is not a VHT STA~~, indicates that the secondary channel is busy. (#4718)In a VHT STA, indicates that the secondary 20 MHz channel is busy according to the rules specified in 21.3.18.5.4 (CCA sensitivity for signals not occupying the primary 20 MHz channel).In a TVHT STA, indicates that the secondary channel is busy according to the rules specified in 22.3.18.6.4 (CCA sensitivity for signals not occupying the primary channel).In an HE STA, indicates that the secondary 20 MHz channel is busy according to the rules specified in 28.3.17.6.4 (CCA sensitivity for signals not occupying the primary 20 MHz channel(#6125, #6193, #7037, #10178)(#7667)). |
| secondary40 | In a VHT STA, i~~I~~ndicates that the secondary 40 MHz channel is busy according to the rules specified in 21.3.18.5.4 (CCA sensitivity for signals not occupying the primary 20 MHz channel). (#7296)In a TVHT STA, indicates that the secondary TVHT\_2W channel is busy according to the rules specified in 22.3.18.6.4 (CCA sensitivity for signals not occupying the primary channel).In an HE STA, indicates that the secondary 40 MHz channel is busy according to the rules specified in 28.3.17.6.4 (CCA sensitivity for signals not occupying the primary 20 MHz channel(#6125, #6193, #7037, #10178)(#7667)). |
| secondary80 | In a VHT STA, i~~I~~ndicates that the secondary 80 MHz channel is busy according to the rules specified in 21.3.18.5.4 (CCA sensitivity for signals not occupying the primary 20 MHz channel). (#7297)In an HE STA, indicates that the secondary 80 MHz channel is busy according to the rules specified in 28.3.17.6.4 (CCA sensitivity for signals not occupying the primary 20 MHz channel(#6125, #6193, #7037, #10178)(#7667)). |
| per20MHzbitmap | In an HE STA, i~~I~~ndicates the busy/idle status of each 20 MHz subchannel in 80 MHz, 160 MHz or 80+80 MHz according to the rules specified in ~~28.3.17.6.2 (CCA sensitivity for operating classes requiring CCA-ED) and~~ 28.3.17.6.5 (Per 20 MHz CCA sensitivity(#6125, #6193, #7037, #10178)(#7667)). Valid only for the 20 MHz subchannels that require CCA operation for the preamble puncturing transmission, HE TB PPDU transmission and BQR operation.(#6125, #7296) |
| NOTE—In Table 8-5(The channel-list parameter elements), the term HT STA refers to an HT STA that is neither a VHT STA nor an HE STA and the term VHT STA refers to a VHT STA that is not an HE STA. If a VHT STA is also an HT STA, it only follows the rule for VHT STA. If an HE STA is also a VHT STA and/or an HT STA, it only follows the rule for HE STAs. (#4718) |

* **When generated**

***TGax editor: Delete the NOTE at the end of the first paragraph (CID# 6939):***

~~NOTE—For the VHT PHY, the timing information is omitted here and is defined in 21.3.18.5 (CCA sensitivity).(11ac)~~