IEEE P802.11
Wireless LANs

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| Comment Resolution on Physical CS |
| Date: 2017-03-12 |
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Abstract

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

* CIDs: 3235, 4829, 9339, 9911, 10013, 10172, 10270 (7 CIDs)

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Changed resolution for 9339 to revised.
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.Line Number | Comment | Proposed Change | Resolution |
| 3235 | 170.50 | If any of the 20MHz channels containing the allocated RU is not ailde then the STA shall not sent the TB PPDU; "... if the STA detects that the 20 MHz channels containing the allocated RUs are not all idle, then the STA shall not transmit anything in the allocated RUs." | " ... if the STA detects that any of the 20 MHz channels containing the allocated RUs is not all idle, then the STA shall not transmit anything in the allocated RUs." | Rejected-The comment does not identify any particular technical issue. The original sentence seems quite clear. |
| 4829 | 170.23 | from "ED-based ..." to the end of he paragraph. These concepts are more precisely described in the paragraph starting at line 40 | Remove the quotes sentences | Revised-Agree in principle with the comment. Reference to CCA-ED is deleted. However the paragraph at line 40 does not describe virtual CS and so reference for virtual CS is retained.TGax editor to make the changes shown in 11-17/0338r1 under all headings that include CID 4829. |
| 9339 | 170.18 | As aSIFSTime is defined in 10.3.7 as aSIFSTime = aRxPHYDelay + aMACProcessingDelay + aTxPHYDelay + aRxTxSwitchTime + aTxRampOnTime and it doesn't include aCCATime (8.3.5.12), in the original 802.11 SIFS, STAs that even have enough processing time for CCA don't have to sense the medium during SIFS from the definition point of view. But now the HE STAs are required to perform ED-based CCA if they didn't require MAC padding in a Trigger frame. | Add "HE STAs that did not require the MAC padding field in the Trigger frame shall secure a time to perform ED-based CCA during aSIFSTime. HE STAs that required the MAC padding field in the Trigger frame shall secure a time to perform ED-based CCA during MinTrigProcTime+aSIFSTime." after eq. (10-4) in subclause 10.3.7. | Revised-Agree in principle with the comment. The comment raises a concern that HE STAs that require MAC padding field in the Trigger frame may not have enough time to perform ED-based CCA during aSIFSTime after the Trigger frame. To ensure that the ED-based CCA requirement during the SIFS is respected by HE STAs, clarification sentences are added to section 10.3.2.3.3 SIFS. TGax editor to make the changes shown in 11-17/0338r1 under all headings that include CID 9339. |
| 9911 | 170.23 | In sub-clause 21.3.18.5.2, ED-based CCA channel status decision is made for channels of Primary 20MHz, Secondary 20MHz, Secondary 40MHz, and Secondary 80MHz only. However, for trigger-based PPDU transmission, the ED-based CCA channel status decision needs to be done only for those 20MHz channels thar RU is assigned for a STA. Therefore, we cannot just follow ED-based CCA rule defined in 21.3.18.5.2. Further clarification is needed. | As in the comment. | Revised-Agree in principle with the comment. Reference to sub-clause 21.3.18.5.2 is replaced with reference to sub-clause 28.3.17.6.5 Per-20MHz CCA sensitivity [Ref: 17/209r2], which defines the rules for ED-based CCA for trigger-based PPDU transmission.TGax editor to make the changes shown in 11-17/0338r1 under all headings that include CID 9911. |
| 10013 | 170.24 | If a triggered STA observes medium busy using Energy Detection, the energy is from OBSS or other systems. The STA should be able to transmit the triggered PPDU if the required transmission power is low. | Define a rule that allows STAs to override Energy Detection depending on the received energy level and required transmission power of the triggered PPDU, similar to that of OBSS-PD. | Rejected-If the medium is detected as busy by Energy Detection, the interference signal would be quite strong making any transmission by the STA a potential source of interference as well. Also, no specific resolution is proposed. |
| 10172 | 170.23 | "ED-based CCA is described in 21.3.18.5.2 (CCA sensitivity for operating classes requiring CCA-ED)". There is a subclause for CCA-ED in 28.3.17.6.2, the ED-based CCA for UL MU CS is better to refer to this subclause.Same comment for other CCA reference of HE operation. | As in comment. | Revised-Agree in principle with the comment. Reference to sub-clause 21.3.18.5.2 is replaced with reference to sub-clause 28.3.17.6.5 Per-20MHz CCA sensitivity [Ref: 17/209r2], which defines the rules for ED-based CCA for trigger-based PPDU transmission.TGax editor to make the changes shown in 11-17/0338r1 under all headings that include CID 10172. |
| 10270 | 170.20 | These spec texts in this subclause misuse the terminology "CCA-ED". This terminology problem was discussed in 15/0338r1. CCA-ED is the threshold that is used for specific operation bands to improve spectral sharing. Because of this misuse, the spec texts about CCA-ED in this subclause do not make sense. | Delete texts which mention CCA-ED in this subclause. | Revised-Agree in principle with the comment. Reference to CCA-ED is replaced with reference to sub-clause 28.3.17.6.5 Per-20MHz CCA sensitivity [Ref: 17/209r2], which defines the rules for ED-based CCA for trigger-based PPDU transmission.TGax editor to make the changes shown in 11-17/0338r1 under all headings that include CID 10270. |

**Discussion:** None

**Propose:**

Revised for CIDs 4829, 9339, 9911, 10172 and 10270 as per discussion and editing instructions in 11-17/0338r10338r1.

* SIFS (CID 9339)

***TGax editor: Add a paragraph to the end of 10.3.2.3.3 as follows:***

An HE STA that transmits an HE trigger-based PPDU at the SIFS time boundary after the end of a received PPDU shall follow the conditions described in 27.5.2.3 (STA behavior). (#9339)

27.5.2.4 UL MU CS mechanism (CIDs 4829, 9911, 10172 and 10270)

***TGax editor: Modify the sentence on page 170 line 20 to line 24 in 27.5.2.4 as the following:***

The ED-based CCA and virtual CS functions are used to determine the state of the medium if CS is required before responding to a received Trigger frame. ~~ED-based CCA is described in 28.3.17.6.2 (CCA sensitivity for operating classes requiring CCA-ED)(#7248)(#8538)(#9418)(#10162) and v~~Virtual CS is defined in 10.3.2.1 (CS mechanism). (#4829)

***TGax editor: Modify the sentence on page 170 line 40 to line 43 in 27.5.2.4(as modified by 11-17/302r2) as the following:***

If the CS Required subfield in a Trigger frame is set to 1, the STA shall consider the status of the CCA (using Energy Detect defined in ~~21.3.18.5.2 CCA sensitivity for operating classes requiring CCA-ED)~~ 28.3.17.6.5 Per-20MHz CCA sensitivity (#9911, #10172, 10270) and the virtual carrier sense (NAV) during the SIFS time after the Trigger frame before the transmission of the solicited PPDU in response to the Trigger frame.