### IEEE P802.11 Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11ax D1.4 MAC Comment Resolution for CID 9636, 9699 | | | | |
| Date: 2017-09-05 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Po-Kai Huang | Intel Corporation | 2200 Mission College Blvd, Santa Clara, CA 950542200 |  | po-kai.huang@intel.com |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes resolutions for comments of TGax Draft 1.4 with the following CIDs:

9636, 9699

Revisions:

* Rev 0: Initial version of the document.

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 D1.4 Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax D1.4 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.***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CID** | **Commenter** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 9636 | Yongho Seok | 150.30 | 27.2.2 | "...if one of the two NAV timers is nonzero, the virtual CS indication is that the medium is busy." Exceptaionally, when the TXOP responder transmits a response frame (for example, HE trigger-based PPDU transmission in a response of trigger frame, CTS frame transmission in a response of RTS frame), the virtual CS indication is that the medium is busy only if the basic NAV is busy, regardless of the intra-BSS NAV. | Change it as the following: "...if one of the two NAV timers is nonzero, the virtual CS indication is that the medium is busy except for a TXOP responder. In such case, the TXOP responder considers only the basic NAV for determining the virtual CS indication." | Revised –  We clarify that the texts in 27.2.3 (Updating two NAVs) describes the busy indication for general backoff operation. The response behaviour for HE TB PPDU is separately defined in 27.5.2.4 UL MU CS mechanism. Further, the response behaviour for CTS and acknowledgement is separately defined in 10.3.2.7 (CTS and DMG CTS procedure) and 10.3.2.9 (Acknowledgment procedure). A note shown below has been added in D1.3 to clarify the operation.  *NOTE 3—The additional rules of NAV consideration for a STA that is solicited for an immediate response are described in 10.3.2.7 (CTS and DMG CTS procedure), 10.3.2.9 (Acknowledgment procedure), and 27.5.2.4 (UL MU CS mechanism).*  We further clarify that for an HE STA maintaining Two NAVs, the NAV referred by the description in 10.3.2.7 is the basic NAV.  TGax editor to make the changes shown in 11-17/1301r0 under all headings that include CID 9636. |
| 9699 | Yongho Seok | 150.24 | 27.2.2 | "An HE non-AP STA shall maintain two NAV timers." When an HE non-AP STA is not associated with an HE AP, it is not required to maintain two NAV timers. Because the HE trigger-based PPDU is not used. Change it as the following: "An HE non-AP STA associated with an HE AP STA shall maintain two NAV timers." | As per comment. | Revised–  We note that HE trigger-based PPDU may still be used by unassociated non-AP STA as described in 27.5.4 UL OFDMA-based random access (UORA). Hence, the reasoning for the suggestion is not true.  To make sure that response from unassociated non-AP STA can work properly for response to Trigger frame, we revise the text accordingly in 27.5.2.4.  For the mandatory support of two NAVs, we note that for an unassociated non-AP STA, intra-BSS NAV is never updated since none of the received frames will be identified as intra-BSS as described in 27.2.1 (Intra-BSS and inter-BSS frame determination). As a result, we simply keep all the rules in 27.2.3 rather than duplicating the description again in 10.3.2.4 for the unassociated non-AP STA.  TGax editor to make the changes shown in 11-17/1301r0 under all headings that include CID 9699. |

**Discussion:** *None.*

**Propose:** Revised for CID 9636 per discussion and editing instructions in 11-17/1301r0.

***TGax editor: Modify 27.2.3 Updating two NAVs as the following: (Track change on)***

**(…existing texts …)**

The requirements in 10.3.2.1 (CS mechanism) apply(#7167) to an HE STA maintaining two NAVs with the  
exception of the virtual CS indication of medium. For an HE STA maintaining two NAVs, if both the NAV  
timers are 0, the virtual CS indication is that the medium is idle; if one of the two NAV timers is nonzero,  
the virtual CS indication is that the medium is busy.

The procedure in 10.3.2.7 (CTS and DMG CTS procedure) applies to an HE STA maintaining two NAVs, and the NAV referred by the description in 10.3.2.7 is the basic NAV.(#9636)

**(…existing texts …)**

**Propose:** Revised for CID 9699 per discussion and editing instructions in 11-17/1301r0.

***TGax editor: Modify 27.5.2.4 UL MU CS mechanism as the following: (Track change on)***

**(…existing texts …)**

A NAV is considered in virtual CS for a STA that is solicited by a Trigger frame from an associated AP (#9699) for transmission unless one of the following conditions is met:(#4831)

— The NAV was set by an intra-BSS frame — The NAV counter is 0(#5992)

A NAV is considered in virtual CS for a STA that is solicited by a Trigger frame from an unassociated AP for transmission unless one of the following conditions is met:

— The NAV was set by a frame originating from the STA sending the Trigger frame

— The NAV counter is 0 (#9699)

NOTE 1—The details of how a STA is solicited by the Trigger frame for transmission are described in 27.5.2.2.2  
(Allowed settings of the Trigger frame fields and UMRS Control field(#Ed)).

NOTE 2—A STA can respond to a Trigger frame from an unassociated AP through the UORA procedure (see 27.5.4 (UL OFDMA-based random access (UORA))).(#9699)

NOTE 3—When a STA responds to a Trigger frame from an unassociated AP, the method to identify that a NAV was set by a frame originating from the STA sending the Trigger frame is implementation specific. For example, a STA can save the TXOP holder address and match the saved TXOP holder address with the TA field of the Trigger frame. (#9699)

**(…existing texts …)**