IEEE P802.11
Wireless LANs

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| Proposed resolution for CIDs for 27-2-2 |
| Date: 2018-03-07 |
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Abstract

This submission proposes resolutions for multiple comments related to TGax D2.0 subclause 27.2.2 with the following CIDs :

* 11488, 11735,11737,11792,12132,12133,12180,12262,12264,12456,12459,12809,14095,12177

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 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** | **commenter** | **Section** | **Pg / Ln** | **Cohmment** | **Proposed Change** | **Resolution** |
| 11488 | Chao chun Wang | 27.2.2 | 222.51 | "If the received frame does." . Is this paragraph really necessary? Does it say actually anything? | Delete the paragraph | RevisedAgree with the comment. If a PPDU cannot be determined as intra-BSS or inter-BSS frame, then it is not classified so that the basic NAV would be set but no spatial reuse can be performed over it. TGax editor please make the changes as shown in 11-18/0588r0 |
| 11735 | Geonjung Ko | 27.2.2 | 222.22 | While the subclause 27.2.2 in the current spec instructs the PPDU with the BSS\_COLOR of 0 to be classified as an intra-BSS frame, the TXVECTOR parameter BSS\_COLOR setting to 0 is used for an inter-BSS frame.According to the subclause 27.11.4 (BSS\_COLOR), the TXVECTOR parameter BSS\_COLOR is set to 0 when one or more of the intended recipient STAs is not a member of the transmitter's BSS. In that case, those recipient STAs are in the inter-BSS and the PPDU with the BSS Color field set to 0 is an inter-BSS frame.Also, in the previous drafts (until D1.4), if the RXVECTOR parameter BSS\_COLOR is equal to 0, it is determined that the received frame is neither an intra-BSS frame nor an inter-BSS frame. | Change the sentence as below."The RXVECTOR parameter BSS\_COLOR of the PPDU carrying the frame is the BSS color of the BSS of which the STA is a member." | RevisedAgree with the comment. A PPDU with BSS\_COLOR of 0 shall not be discarded so that the MAC addresses will be decoded to help classify the PPDU as intra-BSS or inter-BSS frame. TGax editor please make the changes as shown in 11-18/0588r0 |
| 11737 | Geonjung Ko | 27.2.2 | 222.17 | For the HE MU PPDU intended for an AP, the STA-ID field includes the transmitter STA's AID. Thus, when an AP receives an UL HE MU PPDU and there is no STA, of which the AID is equal to the value of the STA-ID field, in the BSS the AP is operating, the PPDU must be from an inter-BSS. Then the AP can determine whether the PPDU is an inter-BSS frame correctly in the HE-SIG-B even in the BSS color collision case (earlier than checking the MAC header). | Add the inter-BSS frame condition"The PPDU is an HE MU PPDU with the RXVECTOR parameter UL\_FLAG equal to 1, the STA is an AP, and there is no STA, of which the 11 LSBs of the AID is equal to the RXVECTOR parameter STA\_ID\_LIST, in the BSS that the STA operates." | RejectedIn most cases, BSS color in HE-SIG-A can determine the intra-BSS or inter-BSS frame. It is a minor case where BSS color collision happens. It is kind of expensive by looking up all allocated STA-IDs to solve the issue in this minor case. |
| 11792 | Graham Smith | 27.2.2 | 221.54 | "A STA that obtains at least the RXVECTOR for a PPDU..." Why "at least"? Is this needed why? Delete | Delete "at least" from cited text | AcceptedTGax editor please make the changes as shown in 11-18/xxxxr0 |
| 12132 | Kaiying Lv | 27.2.2 | 221.60 | There is another case: when two HE STAs are associated with a non-HE AP, there is a TDLS link between the two HE STAs. If the color is not 0 using by the two HE STAs, the HE STAs cannot clarify the PPDUs as an inter-BSS PPDU when the PPDU is an HE PPDU with the RXVECTOR parameter BSS\_COLOR not equal to 0 and the STA is an HE STA associated with a non-HE AP. Please clarify it. | as comment | RevisedAgree with the comment.TGax editor please make the changes as shown in 11-18/0558r0. |
| 12133 | Kaiying Lv | 27.2.2 | 222.06 | When the PPDU is a VHT MU PPDU, there is no UL\_FLAG in RXVECTOR. Please clarify it | as comment | RejectedHere the UL\_FLAG is only for HE MU PPDU. |
| 12180 | Kaiying Lv | 27.2.2 | 222.51 | When an HE STA is not associated with any AP, how to classify a PPDU as an inter-BSS frame or an intra-BSS frame. | as comment | RevisedAgree with the comment. For the case where an HE STA is not associated with any AP, a PPDU received by the STA is not classified. TGax editor please make the changes as shown in 11-18/0558r0 |
| 12262 | Kaiying Lv | 27.2.2 | 221.60 | There is another case: when two HE STAs are associated with a non-HE AP, there is a TDLS link between the two HE STAs. If the color is not 0 using by the two HE STAs, the HE STAs cannot clarify the PPDUs as an inter-BSS PPDU when the PPDU is an HE PPDU with the RXVECTOR parameter BSS\_COLOR not equal to 0 and the STA is an HE STA associated with a non-HE AP. Please clarify it. | as comment | RevisedSee CID 12132.TGax editor please make the changes as shown in 11-18/0558r0 |
| 12264 | Kaiying Lv | 27.2.2 | 222.06 | When the PPDU is a VHT MU PPDU, there is no UL\_FLAG in RXVECTOR. Please clarify it | as comment | RejectedSee CID 12133 |
| 12456 | Liwen Chu | 27.2.2 | 222.55 | The sentence is not well written. MPDUs in an A-MPDU all belong to either intra-BSS or inter-BSS. | Rewrite the sentence. | Revised.Agree with the comment. Modify the expression. TGax editor please make the changes as shown in 11-18/0558r0 |
| 12459 | Liwen Chu | 27.2.2 | 220.21 | The PPDU with RXVECTOR parameter BSS\_COLOR being 0 should not be identify as intra-BSS PPDU. | Change the text per the comment. | RevisedAgree with the comment.A PPDU with BSS\_COLOR of 0 shall not be discarded so that the MAC addresses will be decoded to help classify the PPDU as intra-BSS or inter-BSS frame. TGax editor please make the changes as shown in 11-18/0588r0 |
| 12809 | Mark RISON | 27.2.2 | 222.01 | "PARTIAL\_AID[5:8] not equal to the partial BSS color announced by the BSS" -- partial BSS colour is not announced, the full colour is, with an extra info that partial BSS colour bits are in use for AIDs | Reword as "PARTIAL\_AID[5:8] is not compatible with the BSS color announced by the BSS" | AcceptedTGax editor please make the changes as shown in 11-18/0558r0 |
| 14095 | Yuichi Morioka | 27.2.2 | 221.52 | Shouldn't the PPDU be classified as inter-BSS "PPDU" instead of inter-BSS "frame"? | If the Inter/Intra is an attribute of the PPDU, then, change all occurrence of "inter/intra-BSS frame" to "inter/intra-BSS PPDU". | RevisedAgree with the comment. TGax editor please make the changes as shown in 11-18/0588r0 |
| 12177 | Kaiying Lv | 27.2.4 | 223.18 | When a HE STA is not associated with a AP, which NAV is updated by a received PPDU?  | Please clarify it | RevisedAgree with the comment. For the case where an HE STA is not associated with any AP, a PPDU received by the STA is not classified so that the inter-BSS NAV will be updated.TGax editor please make the changes as shown in 11-18/0558r0 |

* **Intra-BSS and inter-BSS frame determination**

TGax Editor: Please replace the whole paragraphs (pg 221, line 52 in D2.0) in this section as follows:

A STA that obtains ~~at least the RXVECTOR for~~ a PPDU [11792] shall classify the PPDU as an inter-BSS PPDU ~~frame~~[14095] if at least one of the following conditions is true:

— The RXVECTOR parameter BSS\_COLOR is not 0 and is not the BSS color of the BSS of which the STA is a member.

— The PPDU is an HE PPDU with the RXVECTOR parameter BSS\_COLOR not equal to 0 and the STA is an HE STA associated with a non-HE AP.

— The PPDU is a VHT PPDU with RXVECTOR parameter PARTIAL\_AID not equal to the BSSID[39:47] of the BSS or the BSSID of any BSS that is a member of the same multiple BSSID set as the BSS of which the STA is a member and the RXVECTOR parameter GROUP\_ID is 0.

— The PPDU is a VHT PPDU with RXVECTOR parameter PARTIAL\_AID[5:8] not compatible with the BSS color ~~equal to the par-tial BSS color~~ [12809]announced by the BSS of which the STA whose dot11PartialBSSColorImplemented is equal to true is a member and RXVECTOR parameter GROUP\_ID equal to 63 when the Partial BSS Color field in the most recent HE Operation element is 1.

— The PPDU is either a VHT MU PPDU or an HE MU PPDU with the RXVECTOR parameter UL\_- FLAG equal to 0 and the STA is an AP.

— The PPDU carries a frame that has a BSSID field, the value of which is not the BSSID of the BSS or any BSS that is a member of the same multiple BSSID set as the BSS of which the STA is a mem-ber.

— The PPDU carries a frame that does not have a BSSID field but has both an RA field and TA field, neither value of which is equal to the BSSID of the BSS or the BSSID of any BSS that is a member of the same multiple BSSID set as the BSS of which the STA is a member. The Individual/Group bit in the TA field value is forced to 0 prior to comparison.

Otherwise, if at least one of the following conditions is true:

— The RXVECTOR parameter BSS\_COLOR of the PPDU carrying the frame is ~~0 or~~ the BSS color of the BSS of which the STA is a member.

— The PPDU is a VHT PPDU with RXVECTOR parameter PARTIAL\_AID equal to the BSSID[39:47] of the BSS or of any BSS that is a member of the same multiple BSSID set as the BSS of which the STA is a member, and the RXVECTOR parameter GROUP\_ID equal to 0

— The PPDU is a VHT PPDU with RXVECTOR parameter PARTIAL\_AID[5:8] equal to the partial BSS color of the BSS of which the STA whose dot11PartialBSSColorImplemented is equal to true is a member, the RXVECTOR parameter GROUP\_ID is equal to 63 and the Partial BSS Color field in the most recent HE Operation element is 1.

— The PPDU carries a frame that has an RA, TA or BSSID field value that is equal to the BSSID of the BSS or the BSSID of any BSS that is a member of the same multiple BSSID set as the BSS of which the STA is a member. The Individual/Group bit in the TA field value is forced to the value 0 prior to the comparison.)

— The PPDU carries a Control frame that does not have a TA field and that has an RA field value that matches the saved TXOP holder address of the BSS or any BSS that is a member of the same multi-ple BSSID set as the BSS of which the STA is a member.

NOTE—See 10.20 for the definition of PARTIAL\_AID[5:8] and BSSID[39:47].

If the RXVECTOR parameter BSS\_COLOR of the received PPDU carrying the frame is 0, the decision is made by using the MAC address. [11735, 12132, 12262, 12459]

Otherwise, the PPDU cannot be determined as an intra-BSS or inter-BSS PPDU ~~frame~~[14095].

If the received frame satisfies both intra-BSS and inter-BSS conditions, the decision made by using the MAC address takes precedence over the decision made by using the RXVECTOR parameter BSS\_COLOR.

If the received frame does not satisfy any of the intra-BSS and inter-BSS conditions, then the frame is not classified ~~nei-ther an intra-BSS frame nor an inter-BSS frame~~.[11488]

A STA that obtains a ~~A~~ PPDU ~~carrying~~ with at least one correct inter-BSS PPDU ~~frame~~[14095] is an inter-BSS PPDU. A STA that obtains a ~~A~~ PPDU ~~carrying~~ with at least one correct intra- BSS frame is an intra-BSS PPDU. [12456]

A STA that is not associated with any AP shall not classified an obtained PPDU as inter-BSS or intra-BSS PPDU. [12180, 12177]

**27.11.4 BSS\_COLOR**

TGax Editor: Please add the following text (pg 305, line 46 in D2.0) in this section as follows:

An HE STA that is associated with a non-HE AP shall set the TXVECTOR parameter BSS\_COLOR for an HE PPDU that is addressed to a peer STA to 0, if the HE STA has established any of the following:

— A TDLS link with the peer STA

— A DLS link with the peer STA

— An IBSS membership with the peer STA