IEEE P802.11
Wireless LANs

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| CID 11001 |
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Abstract

This submission proposes resolution for CID 11001 received for TGax LB230

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** | **Pg / Ln** | **Section** | **Comment** | **Proposed Change** | **Resolution** |
| 11001 | Abhishek Patil | 85.10 | 9.3.1.23 | Random access for unassociated STAs is broken. In case of random access for unassociated STAs (AID12=2045), the most likely case is that an unassociated STA wishing to use the random access RU has not received any other frames from the AP sending the Trigger frame. As a result, the unassociated STA has no knowledge of the reference channel (primary 20). Since the RU indexing is with respect to the primary20 of the AP, how would an unassociated non-AP STA know the RU mapping of the Trigger frame? | As in comment | **Revised**An unassociated STA may not have received any mgmt. frame from the AP before it hears a TF with AID12=2045. In such case, the STA would need to know the primary channel to honor the NAV rules (see 27.5.3.5). In addition, it is possible that AP responds to the STAs request in an SU PPDU which will be transmitted in AP’s primary. **Option 1**: The Trigger Dependent User Info field when AID12=2045 is overloaded to signal the location of AP’s primary 20Hz. Only Basic Trigger frame is allowed to carry RA-RUs for unassociated STAs. Further, an unassociated STA is only permitted to send a single management frame in an HE TB PPDU as a response to a TF with RA-RU containing AID12=2045. Therefore, the subfields of Trigger Dependent User Info field of a Basic Trigger frame are not applicable when the RA-RU is assigned for unassociated STAs. Since one octet field is sufficient to indicate the primary operating channel of the AP, the 1-octet Trigger Dependent User Info field can be overloaded to indicate the primary channel of an AP.**TGax editor, please make changes as shown in doc 11-18/0364r0** |

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**27.5.5.5 Additional Considerations to Support Random Access for Unassociated STAs**

***TGax Editor: Please add new paragraph after the 2nd paragraph in this section as shown below (11ax D2.2 P273L31):***

An AP shall indicate its primary operating channel via the Trigger Dependent User Info subfield corresponding to an RA-RU with AID12 set to 2045 in a Basic Trigger frame (see 9.3.1.23.1 Basic Trigger variant).[11001]

***TGax Editor: Please add new bullets as shown below to the following in this section (11ax D2.2 P273L32):***

A non-AP STA that sends an HE TB PPDU by following the UORA procedure in response to a Trigger frame from an AP it is not associated with allocating RA-RU(s):

* shall set the TXVECTOR parameter BSS\_COLOR to the value of the RXVECTOR parameter BSS\_COLOR of the soliciting Trigger frame (see 27.5.5.2 (UORA Procedure) and 27.5.3.3 (STA behavior for UL MU operation)).
* shall determine the primary channel of the AP via the Trigger Dependent User Info subfield corresponding to the RA-RU.[11001]
* shall include at most one MMPDU in the HE TB PPDU.[11001]
* shall set the RA field of the frame carried in the HE TB PPDU to the TA address of the soliciting Trigger frame or to the address of a nontransmitted BSSID if the soliciting BSS corresponds to transmitted BSSID.
* **Basic Trigger variant**

***TGax Editor: Please make the following changes to this section as shown below (11ax D2.2 P94L40):***

 [11001]The Trigger Dependent Common Info subfield is not present in the Basic Trigger frame. The Trigger Dependent User Info subfield of the Basic Trigger frame is as defined in Figure 9-52j (Trigger Dependent User Info subfield for the Basic Trigger variant when AID12 subfield is not 2045) when the AID12 subfield of the User Info field is not equal to 2045. The Trigger Dependent User Info subfield of the Basic Trigger frame is as defined in Figure 9-52jj (Trigger Dependent User Info subfield for the Basic Trigger variant when AID12 subfield is 2045) when the AID12 subfield of the User Info field is equal to 2045.

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|  | B0                       B1 | B2                    B4 | B5 | B6               B7 |
|  | MPDU MU Spacing Factor | TID Aggregation Limit | Reserved | Preferred AC |
| Bits: | 2 | 3 | 1 | 2 |
| * **Trigger Dependent User Info subfield(#7324) for the Basic Trigger variant when AID12 subfield is not 2045**[11001]
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[11001]When the AID12 subfield of the User Info field is not equal to 2045, the Trigger Dependent User Info carries the MPDU MU Spacing Factor, TID Aggregation Limit and Preferred AC subfields.

Note: The MPDU MU Spacing Factor, TID Aggregation Limit and Preferred AC subfields do not apply to the case when AID12=2045 since the response is a single MMPDU (see 27.5.5.5 (Additional Considerations to Support Random Access for Unassociated STAs)).

The MPDU MU Spacing Factor subfield is used for calculating *MSF*, the value by which the minimum MPDU start spacing is multiplied (see 10.13.3 (Minimum MPDU Sstart Sspacing field rules)). *MSF* is equal to 2MPDU MU Spacing Factor.

The TID Aggregation Limit subfield indicates the MPDUs allowed in an A-MPDU carried in the HE TB PPDU and the maximum number of TIDs that can be aggregated by the STA in the A-MPDU and is set as defined in 27.5.3.2.3 (Allowed settings of the Trigger frame fields and UMRS Control subfield).

The value in the TID Aggregation Limit subfield in Trigger frame is less than or equal to *MT* + 1, where *MT* is the value indicated in the Multi-TID Aggregation Tx Support subfield in the HE MAC Capabilities Information field in the HE Capabilities element transmitted by the non-AP STA that is the intended receiver of the User Info field.

The Preferred AC subfield indicates the lowest AC that is recommended for aggregation of MPDUs in the A-MPDU contained in the HE TB PPDU sent as a response to the Trigger frame. The encoding of the Preferred AC subfield as defined in Table 9-136 (ACI-to-AC encoding).

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|  | Primary Channel |
| Octet: | 1 |
| **Figure 9-52jj – Trigger Dependent User Info subfield(#7324) for the Basic Trigger variant when AID12 subfield is 2045**[11001] |

[11001]When the AID12 subfield of the User Info field is equal to 2045, the Trigger Dependent User Info carries the Primary Channel field. The Primary Channel field is as defined in 9.4.2.57 (HT Operation element) and indicates the channel number of the primary channel of the AP.