IEEE P802.11
Wireless LANs

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| Resolution for CID 11374 |
| Date: January 7, 2018 |
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Abstract

This submission proposes resolutions for following CID 11374 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** |
| 11374 | Bibhu Mohanty | 149.25 | 9.4.2.238 | BSS Color, Partial BSS Color and BSS Color Disabled subfields can be combined and moved out of HE Op Parameters and specified under a new 1 octet field (called BSS Color Information). | Define a new field called BSS Color Information which includes a 6-bit BSS Color subfield, a 1-bit Partial BSS Color subfield and a 1-bit BSS Color Disabled subfield. Reduce the size of HE Operation Parameters field accordingly. | **Revised**Consolidated the 3 BSS Color related fields in to a single 1-octet field. Reduced size of HE Operation Parameters field by 1-octet.**TGax editor, please make changes as proposed in doc 11-18/0068r0** |

* HE Operation element

The operation of HE STAs in an HE BSS is controlled by the HT Operation element, the VHT Operation element and the HE Operation element. The format of the HE Operation element is defined in Figure 9-589cq (HE Operation element format).

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|  |  |  |  |  |  |  |  |  |
|  | Element ID | Length | Element ID Extension | HE Operation Parameters | BSS Color Information(#7718) | Basic HE-MCS And NSS Set | VHT Operation Information | MaxBSSID Indicator |
| Octets: | 1 | 1 | 1(#Ed) | 3 | 1 (#9674) | 2 | 0 or 3(#3035) | 0 or 1(#3034) |
|  | * **HE Operation element format**
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The Element ID, Length, and Element ID Extension(#Ed) fields are defined in 9.4.2.1 (General).

The format of the HE Operation Parameters field is defined in Figure 9-589cr (HE Operation Parameters field format).

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|  |  | B6       B8 | B9 | B10      B19 |  | B21 | B22    B27 | B28 | B29 |  | B31 |
|  |  | Default PE Duration | TWT Required | TXOP Duration RTS Threshold(#Ed) |  | VHT Operation Information Present | Reserved | Multiple BSSID AP | Tx BSSID Indicator |  | Reserved |
| Bits: |  | 3 | 1 | 10 |  | 1 | 6 | 1 | 1 |  | 1 |
| * **HE Operation Parameters field format**
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The Default PE Duration subfield indicates the Packet Extension (PE) field duration(#8260) in units of 4 μs for an HE TB PPDU that is solicited with an UMRS Control subfield(#7203, #Ed) and is used as defined in 27.5.3.3 (STA behavior for UL MU operation)(#5552). Values 5-7 of the Default PE Duration subfield are reserved.

The TWT Required subfield is set to 1 to indicate that the AP requires its associated(#5554) non-AP HE STAs to operate in the role of either TWT requesting STA, as described 27.7.2 (Individual TWT agreements), or TWT scheduled STA, as described in 27.7.3 (Broadcast TWT operation) and set to 0 otherwise.

The TXOP Duration RTS Threshold subfield enables an HE AP to manage RTS/CTS usage by non-AP HE STAs(#6256) that are associated with it (see 27.2.1 (TXOP duration-based RTS/CTS))(#5555, #5556). The TXOP Duration RTS Threshold subfield contains the TXOP duration RTS threshold in units of 32 s, which enables the use of RTS/CTS except for the value 1023. The value 1023 indicates that TXOP duration-based RTS is disabled.(#4773, #5556, #7870, #7774, #9665)

The VHT Operation Information Present field is set to 1 to indicate that the VHT Operation Information field is present in the HE Operation element and set to 0 otherwise. The field is set to 0 if the frame containing this element also contains a VHT Operation element.(#3035)(#4771)(#7998)(#9757)(#9338)(#Ed)

The Multiple BSSID AP field is set to 1 to indicate that the AP transmitting this element belongs to a Multiple BSSID set and is set to 0 otherwise. A TDLS STA(17/1279r1), IBSS STA or mesh STA(17/533r5) transmitting this element sets the field to 0.(#3034)(#5923)(#5924)(#8261)(#Ed)

(#7995)(#5992)(#9757)The Tx BSSID Indicator field indicates whether an HE AP corresponds to a(#6445) transmitted BSSID. An HE AP corresponding to a nontransmitted BSSID sets the Tx BSSID Indicator field to 0. An HE AP corresponding to a transmitted BSSID sets Tx BSSID Indicator field to 1. The TxBSSID Indicator field is reserved when the Multiple BSSID AP field is 0.(#3034)(#5923)(#5924)(#4774)

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| --- | --- | --- | --- |
|  | B0             B5 | B6 | B7 |
|  | BSS Color | Partial BSS Color | BSS Color Disabled |
| Bits: | 6 | 1 | 1 |
| Figure 9-589crr – BSS Color Information field |

The structure of BSS Color Information field is defined in Figure 9-589crr (BSS Color Information field).

(#4775)(#6437)(#6439)(#6452)(#6458)(#9673)(#9562, #9563)The Basic HE-MCS And NSS Set field(#7718) indicates the HE-MCSs for each number of spatial streams in HE PPDUs that are supported by all HE STAs in the BSS (including IBSS and MBSS) in transmit and receive(#8355). The Basic HE-MCS And NSS Set field is defined in Figure 9-589cn (Rx HE-MCS Map and Tx HE-MCS Map subfields and Basic HE-MCS And NSS Set field).(#4769)

The structure of the VHT Operation Information field is defined in Figure 9-564 (VHT Operation Information field) and its subfields are defined in Table 9-252 (VHT Operation Information subfields). The VHT Operation Information field is present if the VHT Operation Info Present field is 1; otherwise not present.(#3035)(#4771)(#7998)(#9757)(#9338)

The MaxBSSID Indicator field is set to the same value as the MaxBSSID Indicator field carried in the Multiple BSSID element (see 9.4.2.46 (Multiple BSSID element)) advertised by the transmitted BSSID. This field is present if the Multiple BSSID AP subfield is 1 in HE Operation Parameters field and is not present otherwise.(#4774)

* **AID assignment(#7789)(#5879)**

(#9698, #7761)If the value of Partial BSS Color subfield is set to 1 in the HE Operation element that it transmits, then the HE AP shall allocate AIDs according to the formula for AID (5: 8)

AID(5:8) = *bin*[(*BCB*(0:3)  (*BSSID*(44:47) *BSSID*(40:43))) *mod* 24, 4]

where *BCB*(0:3) are the 4 LSBs of the BSS color(#6567) and *bin*[x, 4] is the operator that casts decimal value *x* into 4 bits binary vector.