IEEE P802.11  
Wireless LANs

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| Resolution for CIDs related to Co-Hosted BSSID set | | | | |
| Date: January 14, 2021 | | | | |
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Abstract

This submission proposes resolutions for following 6 CID received for REVme D1.0: 1007, 2203, 1087, ~~1112~~, 1086, 1009

***TGm editor: The baseline for this document is REVme D1.0.***

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Minor updates based on offline feedback (Ming, Eldad, Gaurav)
* Rev 2:
  + CID 1112 is deferred for further discussion
  + Live updates when doc was discussed on 3/21/22 – highlighted
* Rev 3: Provides a resolution to CID 1112

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 TGm Draft. This introduction is not part of the adopted material.

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| **CID** | **Commenter** | **Clause** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 1007 | Abhishek Patil | 9.4.2.249 | 1704.00 | 26 | Per clause 11.1.3.8.1 and clause 26.17.7, an AP with dot11MultiBSSIDImplemented equal to true sets the Co-Hosted BSS subfield in HE Operation element that it transmits to 0. This needs to be captured in the first sentence and removed from the third sentence. | Change the first sentence to: "The Co-Hosted BSS subfield is set to 1 to indicate that the AP transmitting this element has dot11MultiBSSImplemented equal to false, and shares ..." and delete "an AP with dot11MultiBSSImplemented equal to true" from the third sentence. | **Revised**  Agree with the comment. Co-Hosted BSSID set and Multiple BSSID set are mutually exclusive, and the existing standard provides clearly guidance that an AP belonging to a multiple BSSID set has the co-hosted bit set to 0 (see 11.1.3.8.1 and 26.17.7). The proposed change covers this aspect under the rule for setting the Co-Hosted BSS subfield to 1  **TGm editor, please implement changes as shown in doc 11-22/0088r2 tagged as 1007** |
| 2203 | Naveen Kakani | 9.4.2.249 | 1704.00 | 26 | "The Co-Hosted BSS subfield is set to 1 to indicate that the AP transmitting this element shares the same operating class, channel, receive antenna connector, and transmit antenna connector with at least one other AP that is providing its BSS information by transmitting Beacon and Probe Response frames. Otherwise, the subfield is set to 0. An AP operating in the 6 GHz band, a TDLS STA, an IBSS STA, a mesh STA, or an AP with dot11MultiBSSImplemented equal to true sets the subfield to 0."  Co-hosted is conditioned on the requirement that the AP is not supporting Multi BSSID. | Make the following change to the text above: "The Co-Hosted BSS subfield is set to 1 to indicate that the AP transmitting this element has dot11MultiBSSImplemented equal to false, and shares ..." and delete "an AP with dot11MultiBSSImplemented equal to true" from the third sentence. | **Revised**  Agree with the comment. Co-Hosted BSSID set and Multiple BSSID set are mutually exclusive, and the existing standard provides clearly guidance that an AP belonging to a multiple BSSID set has the co-hosted bit set to 0 (see 11.1.3.8.1 and 26.17.7). The proposed change covers this aspect under the rule for setting the Co-Hosted BSS subfield to 1  **TGm editor, please implement changes as shown in doc 11-22/0088r2 tagged as 2203** |
| 1086 | Eldad Perahia | 26.17.2.1 | 4271.00 | 64 | While using MBSSID is the most efficient manner in which to transmit multiple BSSID's, unfortunately the reality is that most client vendors do not support large beacon sizes. So the reality is that we must still split BSSID's into multiple physical beacons. This leads to a conflicts between "co-hosted" definition, 6 GHz, and MBSSID.  If a "legacy" beacon is transmitted for every BSSID, then the following clauses appear to apply: "26.17.7 Co-hosted BSSID set". "HE BSSs that are not part of a multiple BSSID set (i.e., dot11MultiBSSIDImplemented is false) but share the same operating class, channel, receive antenna connector, and transmit antenna connector belong to a cohosted BSSID set." Furthermore, in "9.4.2.249 HE Operation element", "The Co-Hosted BSS subfield is set to 1 to indicate that the AP transmitting this element shares the same operating class, channel, receive antenna connector, and transmit antenna connector with at least one other AP that is providing its BSS information by transmitting Beacon and Probe Response frames."  However in 6 GHz, "26.17.2.1 General", "A 6 GHz AP shall set the Co-Hosted BSS subfield in HE Operation element to 0."  There is a conflict with how to set Co-Hosted BSS when transmitting multiple legacy beacons in 6 GHz. | Resolve the conflict. | **Revised**  Agree with the comment. Co-Hosted BSSID set and Multiple BSSID set are mutually exclusive, and the existing standard provides clearly guidance that an AP belonging to a multiple BSSID set has the co-hosted bit set to 0 (see 11.1.3.8.1 and 26.17.7). The proposed change covers this aspect under the rule for setting the Co-Hosted BSS subfield to 1  **TGm editor, please implement changes as shown in doc 11-22/0088r2 tagged as 1086** |
| 1087 | Eldad Perahia | 11.1.3.8.1 | 2657.00 | 49 | While using MBSSID is the most efficient manner in which to transmit multiple BSSID's, unfortunately the reality is that most client vendors do not support large beacon sizes. So the reality is that we must still split BSSID's into multiple physical beacons. This leads to a conflicts between "co-hosted" definition, 6 GHz, and MBSSID.  If an AP transmits two or more physical beacons to cover all the MBSSID sets, then the following clause appears to apply: "9.4.2.249 HE Operation element", "The Co-Hosted BSS subfield is set to 1 to indicate that the AP transmitting this element shares the same operating class, channel, receive antenna connector, and transmit antenna connector with at least one other AP that is providing its BSS information by transmitting Beacon and Probe Response frames."  However in "11.1.3.8.1 General", "An AP with dot11MultiBSSIDImplemented equal to true shall set the Co-Hosted BSS subfield in HE Operation element that it transmits to 0."  There is a conflict with how to set Co-Hosted BSS when transmitting multiple sets of MBSSID beacons. | Resolve the conflict. | **Revised**  Agree with the comment. Co-Hosted BSSID set and Multiple BSSID set are mutually exclusive, and the existing standard provides clearly guidance that an AP belonging to a multiple BSSID set has the co-hosted bit set to 0 (see 11.1.3.8.1 and 26.17.7). The proposed change covers this aspect under the rule for setting the Co-Hosted BSS subfield to 1  **TGm editor, please implement changes as shown in doc 11-22/0088r2 tagged as 1087** |
| 1112 | Gaurav Patwardhan | 11.1.3.8 | 2657.00 | 49 | By implementation, non-AP STAs are not supporting reception of beacons greater than approx. 1500 bytes. A single transmitted beacon with more than 4 Nontransmitted BSSID Profiles in the Multi-BSSID element exceeds that. There are Managed/Enterprise network use cases that require 8 BSSs established on a single band. A simple solution is to split the pool of Non-trasnmitted BSSID profiles such that they populate Multiple BSSID elements in different trasmitted HE beacons. REVme\_D1.0 (P2657:L49 & P4283:L4) states an HE BSS can be included in a Multiple BSSID set OR a co-hosted BSSID set, not both. Additionally a 6 GHz AP is mandated to set the Co-Hosted BSS subfield in in HE Operation element to 0 (P4271:L64) and hence it is mandatory for a 6 GHz AP to support transmission of Multiple BSSID element in the beacon. Due to the restrictions of non-AP STA Beacon receive requirements, the conflicting normative text wrt Multiple BSSID and Co-Hosted BSSID needs to be deleted/altered or an alternative approach needs to be proposed. This solution will also affect Spatial Reuse feature, beacuse non-AP STAs will send Color Collision reports on seeing the same BSS color value in Beacons corresponding to the different transmitted BSSIDs on the same band populated with different Multiple BSSID elements. | Commenter will bring a proposal | **Revised**  Agree with the comment. Approved resolution for CIDs 1007, 2203, 1087, 1086 provides the necessary changes in clause 9.4.2.249. To address the issue of excessive collision reporting, a NOTE is proposed for clause 26.17 to reduce the frequency of reporting or stop reporting once it has successfully transmitted certain number of collision reports.  **TGm editor, please add the following NOTE at the end of clause 26.17.3.5.2 (Autonomous reporting of BSS color collision):**  “NOTE - In some deployment scenarios, an AP might be unable to or might require longer time to react to a color collision report. To reduce excessive reporting, it is recommended that a non-AP STA reduces its frequency of collision report or stops reporting after it has successfully transmitted certain number of collision reports to the AP.” |
| 1009 | Abhishek Patil | 9.4.2.249 | 1704.00 | 26 | There is normative text in clause 26.17.2.1 which states that a 6 GHz AP is not allowed to set the Co-Hosted BSS subfield to 1. Therefore, it doesn't need to be repeat it in the third sentence of this paragraph. A NOTE would be sufficient. | Update the 3rd sentence to remove "an AP operating in 6 GHz band," and add a NOTE after the paragraph as follows: "An AP operating in 6 GHz band does not set co-hosted BSSID subfield to 1 (see 26.17.2.1 (General))." | **Revised**  Agree with the comment. The spec already has normative text which says a 6 GHz AP cannot operate as a co-hosted BSSID set. This doesn’t need to be repeated at two locations. A NOTE was added as suggested by the comment.  **TGm editor, please implement changes as shown in doc 11-22/0088r2 tagged as 1009** |

* HE Operation element

***TGm editor: Please update the following paragraph this subclause as shown below:***

The Co-Hosted BSS subfield is set to 1 to indicate that the AP transmitting this element [1007, 2203, 1087, ~~1112~~, 1086]has dot11MultiBSSIDImplemented false or not present and shares the same operating class, channel, receive antenna connector, and transmit antenna connector with at least one other AP that is providing its BSS information by transmitting Beacon and Probe Response frames. Otherwise, the subfield is set to 0. A[1009] TDLS STA, an IBSS STA, or a mesh STA[1007, 2203, 1087, ~~1112~~, 1086] sets the subfield to 0.

NOTE - An AP operating in the 6 GHz band sets the Co-Hosted BSS subfield to 0 (see 26.17.2.1 (General)).[1009]