IEEE P802.11
Wireless LANs

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| BSS intention in DMG discovery beacon |
| Date: 2016-05-14 |
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Abstract

Define use of the BSS Type field in DMG Beacon with Discovery Mode set to 1.

Discussion:

Active scan in DMG requires engaging in BTI/A-BFT and then exchange probes between stations. The role of the BTI/A-BFT is to provide basic connectivity between stations to allow probe exchange. In case a STA that initiates active scanning is looking for specific type of BSS, the STA gets the information only after completion of probe exchange due to lack of BSS type information in the SSW frame transmitted to the active scan initiator. For example, searching for a PBSS and not an infrastructure BSS, and vice versa, the STA shall do a probe exchange to get the BSS type information. Providing the BSS type information as an intention of the STA that initiates active scanning improves link utilization and allows spending less power in scanning phase. The information is coveyed only in DMG Beacon with Discovery mode field set to 1.

Rules for responding during A-BFT period following DMG Beacon frames with Discovery mode field set to 1 is as following: Respond during A-BFT

-- If CC Present field is 0

-- Otherwise, if A-BFT Responder address is individual address and matches the STA address

-- Otherwise, if STA role matches the desired role indicated by the value of the BSS Type field.

*Proposed changes:*

**9.4.1.47 DMG Parameters field(11ad)**

*Change text P707L27*

If the BSS Type field is transmitted as part of a DMG Beacon frame that has the Discovery Mode field within the Beacon Interval Control field (see Figure 9-60) equal to 0, then the BSS Type subfield is defined in Table 9-64 (The BSS Type subfield when the Discovery Mode field is 0) for specific types of frame cited below. An AP sets the BSS Type subfield to 3 within transmitted DMG Beacon, Probe Response, or (Re)Association Response frames. A PCP sets the BSS Type subfield to 2 within transmitted DMG Beacon, Probe Response, or (Re)Association Response frames. An IBSS STA or a STA that is not a member of a BSS sets the BSS Type subfield to 1 within transmitted DMG Beacon or Probe Response frames. The BSS Type subfield is reserved for all other types of frame.

*Change the caption of Table 9-64 as follows*

**Table 9-64 The BSS Type subfield when the Discovery Mode field is 0**

*P707L49*

*Insert the following text and table*

If the BSS Type field is transmitted as part of a DMG Beacon frame that has the Discovery Mode field within the Beacon Interval Control field (see Figure 9-60) equal to 1, the BSS Type subfield is defined in Table 9-64xyz (The BSS Type subfield when the Discovery Mode field is 1). Depending on the role of the STA that responds to the DMG Beacon frame (identified as responding STA in Table 9-64xyz), the beahavior is different and is defined in 10.38.5.2.

**Table 9-64 xyz - The BSS Type subfield when the Discovery Mode field is 1**

|  |  |  |
| --- | --- | --- |
| **Subfield value** | **Responding STA role** | **Applicable BSS types** |
| 3 | AP | Infrastructure BSS |
| 2 | PCP | PBSS |
| 1 | Non-AP STA  | PBSS, IBSS |
| 0 | Any | Infrastructure BSS, PBSS, IBSS |

**10.38.5.2 Operation during the A-BFT(11ad)**

*Modify in P1552L46*

A DMG STA that receives a DMG Beacon frame with the Discovery Mode field equal to 1 may transmit in the A-BFT following the BTI where the DMG Beacon frame is received if at least one of the following conditions is met:

— The CC Present field within the received DMG Beacon frame is equal to 1 and the STA’s MAC address is equal to the value of the A-BFT Responder Address subfield within the received DMG Beacon frame.

— The CC Present field within the received DMG Beacon frame is equal to 1, the value of the A-BFT Responder Address subfield within the received DMG Beacon frame is a group address of a group to which the STA belongs, and the STA role matches the role identified by the value of the BSS Type subfiled within the received DMG Beacon frame as defined in Table 9-64 xyz.

— The CC Present field within the received DMG Beacon frame is equal to 0.

If none of these conditions is met following the reception of a DMG Beacon frame with the Discovery Mode field equal to 1, the STA shall not transmit in the A-BFT.

**References:**

1. IEEE P802.11-REVmc/D5.3, April 2016