IEEE P802.11
Wireless LANs

|  |
| --- |
| D0.1 Comment Resolution for Group ID Management |
| Date: March 14, 2011 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Sameer Vermani | Qualcomm |  |  | svverman@qualcomm.com |
| Santosh Abraham | Qualcomm |  |  | sabraham@qualcomm.com |
| Simone Merlin | Qualcomm |  |  | smerlin@qualcomm.com |

Abstract

This document provides resolution for CIDs 772, 1046, 1048, 1330, 1531, 1532, 933, 1153, 1154, 225, 226, 227, 1262, 1263, 1483, 807, 1265, 710, 711, 5, 1047

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CommentID** | **Subclause** | **Page** | **Line** | **CommentType** | **Comment** | **SuggestedRemedy** | **Response** |
| 772 | 7.4.12.3 | 37 | 29 | TR | Define this frame using the standard format | define new management field and use a table to include the field into the new action frame | Added table and diagram in proposed text |
| 1046 | 7.4.12.3 | 37 | 29 | TR | Exact definition of Group ID field is required. The value of 0~62 should indicate Group ID of individual groups. Group ID 63 is used to indicate special meaning as described in 22.3.9.2.3.  | Explicitly describe the meaning of the value 0~62 and especially 63. | Added text to clarify this. |
| 1330 | 7.4.12.3 | 37 | 29 | T | The locations of fields within the groupID management frame is not defined | Define exact frame format for this frame, giving bit level field locations | Added diagram and table |
| 1531 | 7.4.12.3 | 37 | 29 | TR | The definition of Group ID is unclear.  | Define the value 0~62 and 63 which is for special use. | Added text. |
| 1532 | 7.4.12.3 | 37 | 29 | TR | When a VHT STA receives signals from different VHT STAs using MU-MIMO, Group ID may be the same in some cases. However, this can cause a problem when the spatial steam allocations on both transmitters differ. | Clarify the Group ID management in multiple reception cases. | Added text to clarify that AP is the one who transmits this frame. |
| 933 | 7.4.12.3 | 37 | 30 | ER | A table with frame content (as done for other action frames) is missing | add table listing the frame content | Added |
| 1153 | 7.4.12.3 | 37 | 31 | TR | The Group ID management frame is inadequately defined. Define frame format. | For ease of parsing the frame should have a 8 octet membership status array (1 bit per subfield for 64 groups) and a 16 octet STA position array (2 bits per STA position for 64 groups). Both arrays are indexed by Group ID. | Added table and diagram. |
| 1154 | 7.4.12.3 | 37 | 31 | TR | The Group ID management frame needs to be classified for management frame encryption.  | Since this is a real-time frame - table update is immediate on receipt of the frame - the frame should be classified as non-encrypted. | Agree in principle. This classification might happen in a different section |
| 225 | 7.4.12.3 | 37 | 32 | TR | "shall" shall not be used in section 7. | Replace "in such frames shall consists of" with "includes" | Removed “shall”. |
| 226 | 7.4.12.3 | 37 | 32 | TR | The frame format of Group ID management frame is not properly defined. | Insert a table to define the action frame body. | Added table |
| 227 | 7.4.12.3 | 37 | 32 | TR | The format of the Group ID Assignment field is not properly defined. | Insert a figure to illustrate the Group ID assignment field. | Added figure. |
| 1262 | 7.4.12.3 | 37 | 33 | TR | "The frame body in such frames shall consist of a" - WG802.11 style is to avoid all normative language in Clause old 7, with one all-encompassing "shall" in old 7.1. | Convert all shalls related to structure in clause 7 to declarative language. Move all shalls related to behaviour out of clause 7. | Removed “shall”. |
| 1263 | 7.4.12.3 | 37 | 34 | ER | A picture or table would be nice | add one | Added |
| 1483 | 7.4.12.3  | 37 | 38 | TR | "STA position" is the name of 2bit subfield. | 2 bits "STA position" that specifyies spatial time stream position of the STA in the corresponding group ID | Clarified text. |
| 807 | 7.4.12.3 | 54 | 40 | ER | There are 24 octets carrying 3 bits of STA info/group so the exact location of the above fields within the frame body should not be TBD | Remove the sentence | Added diagrams and removed TBD. |
| 1265 | 7.4.12.3 | 37 | 40 | TR | TBDs | resolve them | Removed all TBDs. |
| 710 | 7.4.12.3 | 37 | 41 | ER | TBD should not exists in the standard | Define appropriate value for TBD fields.  | Defined. |
| 711 | 7.4.12.3 | 37 | 41 | TR | The 3-bit indication is not having any reserved values for groups. Also the definition is not good standard text. I propose to combine the "membership status" and STA position fields to 3 bits fields and use value 0 to indicate that the STA is not present in the group ID and values 1 - 4 to indicate the position of the STA in the Group and mark values 5 -7 as reserved. | As in comment. | For ease of parsing, it is a little better to keep membership status and STA positions as separate, as that ensures the fields cross over at byte boundaries. |
| 5 | 7.4.12.3 | 37 | 30-42 | ER | It makes it easier to read of a draw the format of the Group ID management frame is available | add a sketch of the Group ID management frame | Added. |
| 1047 | 7.4.12.3 | 37 | 40-42 | TR | TBD whether the action frame is "robust".TBD on the location of the field. | Define details. | Removed TBD. |

**Proposed Resolution Text:**

#### 7.4.12.3 Group ID Management

***TGac editor: Replace the existing text in this section by the text below.***

The Group ID Management frame is an Action frame of category VHT and is transmitted by the AP to assign or change STA positions corresponding to one or more Group IDs. The frame body in such frames includes an 8 octet Membership status array (indexed by the Group ID) consisting of a 1 bit Membership status for each of the 64 Group IDs and a 16 octet STA position array (indexed by the Group ID) consisting of a 2 bit STA position for each of the 64 Group IDs. The frame format is shown in Table 7-22 below.

Table 7-22 Group ID management frame body

|  |  |
| --- | --- |
| **Order** | **Information** |
| 1 | Category |
| 2 | Action |
| 3 | Membership status array |
| 4 | STA position array |

The Category field is set to the value for VHT. The Action field is set to the value for Group ID Management, specified in Table 7‑20. The exact structure of the fields within the frame body is shown in Figure 7-9 below



**Figure 7‑9 Group ID Management: Frame body**

Within the 8 octet Membership status array, the 1 bit Membership status for each Group ID is set as follows:

Membership status = 0: STA is not a member of the group.

Membershp status = 1: STA is a member of the group.

If the Membership Status bit corresponding to a Group ID is 1, then within the STA position array, the 2 bit STA position for that Group ID is encoded as shown in table 7-23 below:

Table 7-23 Encoding of STA position bits

|  |  |
| --- | --- |
| STA position bits | Position |
| 00 | 1 |
| 01 | 2 |
| 10 | 3 |
| 11 | 4 |

If the Membership status bit for a Group ID is 0, (which means that the STA is not a member of that group) then the STA position bits corresponding to that Group ID in the STA position array are reserved.

For Group IDs of 0 and 63 (special Group IDs for SU transmissions), the membership status and STA position bits shall be set to 1 and 00 respectively.