IEEE P802.11
Wireless LANs

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| LB 200 MAC Resource Allocation frame comment resolution |
| Date: 2014-05-12 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Chittabrata Ghosh | Nokia | 2075 Allston Way, Berkeley, CA | +1-650-200-7566 | chittabrata.ghosh@nokia.com |

Abstract

This submission proposes comment resolutions of MAC Resource Allocation frame comments from TGah **Draft 1.3**.

* CIDs: 1337, 1338, 1339, 1368, 1369, 1370, 1371, 1686, 2116, 2117, 2271, 2272, 2273, 2274, 2453, 2720, 2854

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

***Editing instructions formatted like this are intended to be copied into the TGah Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGah Editor: Editing instructions preceded by “TGah Editor” are instructions to the TGah editor to modify existing material in the TGah draft. As a result of adopting the changes, the TGah editor will execute the instructions rather than copy them to the TGah Draft.***

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 1337 | 50 | 8.3.4.3 | EOM is not described how to be set in this paragraph, and L46-49 is vague in describing how EOM is set. | Add the description of EOM | Revised – Agree in principleTGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854 |
| 1338 | 50 | 8.3.4.3 | "The Slot Assignment field indicates to each of the STA / MU group of STAs' addresses and ... " It's not clear. Maybe "The Slot Assignment field indicates each of the STA / MU group of STAs' addresses and ...". | As in the comment | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 1339 | 50 | 8.3.4.3 | The Slot Assignment field is described in several paragraphs (L27-49) and its defenition changes between the two cases where Group Indicator is 0 or 1. It'd be easier to follow if the Slot Assignment for Group Indocator 0 and 1 are described separatly in two paragraphs. | As in the comment | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 1368 | 49 | 8.3.4.3 | RAW Duration does not have any meaningful meaning, the RAW duration can not be changed later for the following reasons:1- it can not be increased since the STAs not in the RAW group are not listening to the RA frame and therefore they just contend based on the information about the RAW in the Beacon and not the RA frame and this will introduce collisions2- it does not have any benefit to reduce the RAW duration since the rest of the time will remain unsued. | Remove RAW Duration and protocol behaviours related to this field. RAW Duration can not be changed after being advertised in the Beacon. | RejectedComments: The RAW Duration in the Resource Allocation frame may be reduced from the value deduced from the RAW Slot Definition field in the RPS element sent in Beacon or Probe response frames.  |
| 1369 | 49 | 8.3.4.3 | Is the RAW Group nessecary? The STAs that are not included in the RAW will not receive this RA frame anyways. Is there any more info in this field that was not previously indicated in the RPS element? Note that this field will not identify which RAW is the RA frame for with only indicating the RAW Group, for example, there may be multiple RAWs for one group of STAs and this RA frame. | Remove the RAW Group or clarify why is it needed | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 1370 | 49 | 8.3.4.3 | there are multiple Group ID defined in the text with different resolutions for example Group ID defined in page 49 line 56 has 6 bits resolution while Group ID defined in page 124 line 21 has 4 bits resolution and Group ID defined in page 99 line 39 has 8 bits resolution. | either use the same definition through the text or use different names for the "Group ID", e.g. "RA Group ID" | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 1371 | 50 | 8.3.4.3 | the line says: "length is determined based on the value of the EOM subfield" but there is no description and no way to indicate a length with an optional field, and the definition of EOM is missing | define EOM and clarify how does it define the length of a field. Also Clarify its utilization on page 50, Line 48 regarding MU Group | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854 |
| 1686 | 50 | 8.3.4.3 | Apparently "MU group of STAs" is a phrase that has a special meaning. So either this special meaning needs to be specifically defined before this point or this text needs to include a reference to the location of that definition. Also, the definition needs (a) a more manageable name than "MU group of STAs" and (b) clear specification of whether or not "group of STAs" means the same as "MU group of STAs". | Replace "MU group of STAs" with "MU cluster" throughout the draft text, clearly define that term both in 3.2 and somewhere in the draft text, and include a reference to that text location here. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2116 | 49 | 8.3.4.3 | The titles of Figure 8-57 and Figure 8-58 are misleading. When the Group Indicator is set to 1, the frame can also include Slot Assignment Field for assigned STA. | Modify the titles to "Slot Assignment field for MU group of STAs" and "Slot Assignment field for assigned STA" individually. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2117 | 50 | 8.3.4.3 | Partial AID subfield and Group ID subfield are different subfieds,the description should be Separated. | change to The Partial AID subfield indicates a Partial AID for an assigned STA and Group ID subfield indicates a MU Group ID for MUgroup. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2271 | 50 | 8.3.4.3 | How to inteprete the 2-byte RAW duration field in the Resource Allocation frame? Just an unsigned integer number in a given unit? Or the same as the 2-byte RAW slot definition subfield in RPS element? | Please clarify the text in line 20 page 50 to address the questions asked in this comment. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2272 | 50 | 8.3.4.3 | Based on the figure titles of Figure 8-57 and Figure 8-58, the Group Indicator field is ued to indicate the format of the Slot Assignment field, 3-byte vs. 4-byte. Well, the Group Indicator field is per Resource Allocation frame, not per Slot Assignment field. This means all the Slot Assignment fields will have the same format, either 3-byte or 4-byte, not mixed up. Correct? | Please clarify to address the question asked by this comment. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2273 | 50 | 8.3.4.3 | The text about how to indicate which format of Slot Assignment field, 3-byte vs. 4-byte, is very confusing:1). based on the figure titles of Figure 8-57 and Figure 8-58, it is indicated by the Group Indicator field,2). Based on the text in the paragraph in line 27 page 50, it is indicated by the EOM bit. However, how to set up the EOM bit is not specified to indicate the length of Slot Assignment field. Note that EOM only appears in the 3-byte format (Figure 8-57). In addition, the text in line 45 to 49 page 50 specifies that the EOM bit is used to indicate whether its following subfields are used for the last MU group. | Please clarify to address the issue identified by this comment. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2274 | 50 | 8.3.4.3 | read multiple times, but still don't understand the following sentence in line 44 page 50:"This subfield is of length 1 bit and when the bit is set to 0, it indicates DL traffic and UL traffic when the bit is set to 1." | Change it to the following:This subfield is of length 1 bit. When it is set to 0, it indicates DL traffic. When it is set to 1, it indicates UL traffic. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2453 | 50 | 8.3.4.3 | I can't work out what "The Slot Assignment field indicates to each of the STA / MU group of STAs' addresses and their corresponding slot(s) of medium access within the current RAW." means. Ditto at line 55 | Getting rid of the posessive might help | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2720 | 50 | 8.3.4.3 | The subfield of Partial AID for Resource Allocation frame refers to PAID so RAW Group in one RA frame should be only limited to one block (to avoid the duplicate PAID in one RA frame) for >=2MHz. | Provide a note "RAW Group in one RA frame is limited to a block (at most 32 STAs) for >=2MHz" or redefine Partial AID subfield to indicate the 9-bit LSB of AID. | Revised – Agree in principle TGah Editor to make changes as indicated in the document IEEE 802.11-14/0542r0 for CIDs from 1337 to 2854  |
| 2854 | 49 | 8.3.4.3 | It is hard to parse a Slot Assignment fields in a Resource Allocation frame.Define two independant Slot Assignment fields for a MU group and a single STA. | Define two independant Slot Assignment fields for a MU group and a single STA. And update Figure 8-53 accordingly. | RejectedComment: In order to parse the Slot Assignment field, two indicators are provided namely, Group Indicator field prior to the Slot Assignment field, the EOM Indicator subfield, and the restriction that indications of MU Groups always precede the indications for SU STAs. For instance, if the Group Indicator field is 0, the following bit represents the Partial AID, while if the Group Indicator field is 1, the following bit represents the EOM Indicator and its value is 1.  |

**Discussion:**

**CID 1337, 1338, 1339, 1368, 1369, 1370, 1371, 1686, 2116, 2117, 2271, 2272, 2273, 2274, 2453, 2720, 2854**

**Propose:**

Revised for CID 1337, 1338, 1339, 1369, 1370, 1371, 1686, 2116, 2117, 2271, 2272, 2273, 2274, 2453, 2720 per discussion and editing instructions in 11-14/0542r0.

***TGah editor: Modify the sub-clauses 8.2.4.1.3, 8.4.2.170a, 8.8.5.1, and 8.8.5.4 as the following:***

**8.2.4.1.3 Type and Subtype fields**

***Please modify the Editor instruction in Page 41/Line 50 and Table 8-1 in Page 42/Line 1 as follows:***

***Change the following Table 8-1 by adding a row for S1G Beacon~~,~~ ~~and Resource Allocation~~ frame~~s~~ and modify the last value of Subtype for Reserved as follows*** (Ed)***:***

**Table 8-1—Valid type and subtype combinations *(continued)***

|  |  |  |  |
| --- | --- | --- | --- |
| **Type Value****B3 B2** | **Type****description** | **Subtype value****B7 B6 B5 B4** | **Subtype description** |
| 11 | Extension | <ANA> | S1G Beacon(#2519) |
| ~~11~~ | ~~Extension~~ | ~~<ANA>~~ | ~~Resource Allocation~~ |
| 11 |  Extension | <ANA>-1111 | Reserved |

***8.4.2.170a RPS element***

***Please modify the sentence starting at Page 91/Line 48***

If it is equal(#1185) to 1, the AP will transmit a Resource Allocation frame, as defined in ((#1372 moved subclause 8.3.5 to 8.9 while 14/0366r1 moved 8.3.4.3 to 8.8~~7~~.5.4.)), at the beginning of the RAW defined by the RAW Assignment field of the RPS element.

**8.8.5.1 Format of Short Management frames**

***Please modify Table 8-400 in Page 160/Line 17 as follows:***

**Table 8-400—Short Management frame subtypes**

|  |  |
| --- | --- |
| **PTID/Subtype value****b8 b7 b6** | **Subtype description** |
| 000 | Action |
| 001 | Action No Ack |
| 010 | Short Probe Response(#12) |
| 011 | Resource Allocation |
| 100-111 | Reserved |

**8.8.5.4 Resource Allocation frame format**

***Please modify the caption of Figure 8-694 at Page 162/Line 37 as follows:***

**Figure 8-691—Resource Allocation frame format for S~~s~~lot A~~a~~ssignment M~~m~~ode 0**

***Please modify the caption of Figure 8-694 at Page 162/Line 48 as follows:***

**Figure 8-692—Resource Allocation frame format for S~~s~~lot A~~a~~ssignment M~~m~~ode 1**

***Please modify the figure at Page 162/Line 53 as follows:***

|  |  |  |  |
| --- | --- | --- | --- |
| EOM Indicator | ~~Group ID~~GID | Slot Start offset | Reserved |

Bits 1 6 16 1

**Figure 8-693—Slot Assignment field for MU group when S~~s~~lot A~~a~~ssignment M~~m~~ode is equal to 0 and the Group Indicator field is 1**

***Please modify the caption of Figure 8-694 at Page 163/Line 2 as follows:***

**Figure 8-694—Slot Assignment field for an STA when S~~s~~lot A~~a~~ssignment M~~m~~ode is equal to 0 the Group Indicator field is 0**

***Please modify the caption of the figure at Page 163/Line 2 as follows:***

**Figure 8-695—Slot Assignment Indication field when S~~s~~lot A~~a~~ssignment M~~m~~ode is equal to 1**

***Please modify the paragraphs starting at Page 163/Line 40***

The RAW Group indicates the STA AIDs that are assigned the RAW as defined in 8.4.2.170a (RPS element). The AIDs in this RAW Group are identical to the AIDs in the RAW Group subfield with the value in the RAW Type subfield set to 0 and the value in the RAW Type Options subfield set to 1 in the RAW Control subfield within the RPS element. STAs that wake up and receive the Resource Allocation frame use this field to determine whether their AIDs are included within the RAW Group.

The RAW Duration field is an unsigned integer expressed in TUs that indicates the duration of the current RAW where the Resource Allocation frame is broadcasted. The value indicated in this field is either identical to the value of the RAW duration deduced from the value in the RAW Slot Definition subfield (8.4.2.170a – RPS element) or is modified from the value indicated in the RAW Slot Definition subfield of the RPS element (8.4.2.170a - RPS element).

The Group Indicator field ~~of length 1bit~~ indicates whether any subfield of MU group is included or no subfield of MU group exists in the Slot Assignment field if Slot Assignment Mode field is set to 0. Otherwise, it is reserved.

The Slot Assignment field indicates a partial AID for an STA or a GID for STAs in the corresponding MU Group ~~to each of the STA / MU group of STAs’ addresses~~ and their corresponding slot(s) of medium access within the current RAW. Since MU MIMO is used for DL traffic, the first bit, as called End of MU Group (EOM) Indicator, for the MU group block indicates whether the following subfields are used for the last MU group when this bit is 1 or more MU groups exist after subfields for this MU group when the bit is 0. This field is of length 3 octets for each MU Group and 4 octets for each STA and the length is determined based on the value in the EOM subfield.

~~The Slot Assignment field contains EOM Indicator, Group ID, and Slot Start Offset for MU group of STAs as shown in Figure 8-693 (Slot Assignment field when slot assignment mode is equal to 0 and the Group Indicator field is 1) or Partial AID, and Slot Start Offset for an assigned STA as shown in Figure 8-694 (Slot Assignment field when slot assignment mode is equal to 0 the Group Indicator field is 0).~~

If Slot Assignment Mode is set to 0 and the value in the Group Indicator field is 1, the Slot Assignment field is used for either MU group of STAs or an assigned STA~~,~~ as shown in Figure 8-693 and 8-694. If Slot Assignment Mode is set to 0 and the value in the Group Indicator field is 0, ~~otherwise~~ the Slot Assignment field is not used for MU group of STAs. The Slot Assignment field for MU group of STAs is located first at the beginning of the Slot Assignment fields, if exists.(#246)

~~(#14/0366r1)Since MU MIMO is used for DL traffic, the first bit, as called EOM Indicator, for the MU group block indicates whether its following subfields are used for the last MU group when the bit is 1 or more MU groups exist after subfields for this MU group when the bit is 0.~~

The Partial AID subfield indicates ~~either~~ a Partial AID for an assigned STA ~~or a MU Group ID for MU group~~.