IEEE P802.11
Wireless LANs

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| Comment Collection 09 MAC CIDs (Comment Resolutions for CC09) |
| Date: 2013-08-16 |
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Abstract

This document provides resolutions for CIDs 41, 150, 350, and 898 from TGah Draft 0.1 Command Collection 9

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Decision** |
| 41 | 42 | 8.3.4.15b | 2 Byte TA address seems not needed. BSSID address is sufficient to identify the originator of a broadcast frame, which also does not need the Duraiton field. Also there are many TBDs in the RA frame format and unneccessary protocol behavior text. Solve the TBDs inline with RPS IE and remove descriptional spec text referring to its corresponding clause. Clause 8 should only describe frame formats not specific protocol behavior. Add a subclause on clause 9 to describe the behaviour of STA after receiving RA frame. | As in comment | Revised |
| 150 | 43 | 8.3.4a.1.1 | The "TBD units" needs to be defined, with consideration of the slot definition in RPS IE. | Define the “TBD” | Revised |
| 350 | 42 | 8.3.4.15b | Several TBD in this section. | Please provide expansion of TBD where it occurs. | Revised |

**Discussion**:

CIDs 41, 150, and 350 suggest definition of all the TBD fields. Also, CID 41 suggests removing all protocol behavior from this sub-clause. I agree that the TA and Duration fields are not needed in the RA frame.

**Proposed resolution**: I have revised the comment

**Instruction to the Editor**

***Please modify Figure 8-37g in P42/L13 as depicted below:***

 Octets 2 6 3 2 3 or 4 3 or 4 4

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| FC | BSSID | RAW Group | RAW Duration | Group Indicator | Slot Assignment 1 | … | Slot Assignment N | FCS |

Bits 1

**Figure 8-37g—Resource Allocation frame format**

***Please modify Figure 8-37h in P42/L25 as depicted below:***

 Bits 1 6 16 1

|  |  |  |  |
| --- | --- | --- | --- |
| EOM | Group ID | Slot Start Offset | Reserved |

**Figure 8-37h—Slot Assignment field when the Group Indicator field is set to 1**

***Please modify Figure 8-37h in P42/L34 as depicted below:***

 Bits 1 9 16 6

|  |  |  |  |
| --- | --- | --- | --- |
| UL/DL | Partial AID | Slot Start Offset | Reserved |

**Figure 8-37i—Slot Assignment field when the Group Indicator field is set to 0**

***Please modify the paragraphs in P42/L40, L43, and 45 as depicted below:***

~~The Duration field is as defined in 8.2.5 (Duration/ID field (QoS STA))~~

~~The TA field indicates the partial MAC address of the AP transmitting the resource allocation frame.~~

The BSSID indicates the address of the AP transmitting the resource allocation frame ~~is an identifier that uniquely identifies the BSS and is defined in 8.2.4.3.4.~~

***Please modify the paragraph in P42/L58 as depicted below:***

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. This field is of length 3~~2~~ octets for each MU Group and 4~~TBD~~ 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 each MU group of STAs or UL / DL Indicator, Partial AID, and Slot Start Offset for each STA. The subfield for MU group of STAs is located first at the beginning of the Slot Assignment field, if exists.

***Please modify the paragraph in P43/L1 as depicted below:***

Within the Slot Assignment field, the UL /DL Indicator subfield indicates whether the first data transmitted in the assigned RAW slot ~~shall~~ may be used for UL or DL direction. 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. Since MU MIMO ~~can only be~~ 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 set to 1 or more MU groups exist after subfields for this MU group when the bit is set to 0. The next subfield indicates either a Partial AID for an assigned STA or a MU Group ID for MU group. The Slot Start Offset subfield indicates the start time of a RAW slot, in TU, for ~~of~~ a STA’s or MU MIMO group of STAs’ medium access, relative to the end of the RA frame transmission~~, in TBD units~~ and is of length 2 octets.

***Please include the following paragraphs in the Sub-clause 9.19.4a after P130/L40 as indicated below:***

**9.19.4a Restricted Access Window (RAW) Operation**

**9.19.4a.1.1 RAW Operation with Resource Allocation frame**

The AP may broadcast a Resource Allocation (RA) frame not earlier than the beginning of the RAW if the value in Resource Allocation Frame Presence Indication subfield within Options subfield of the corresponding RAW Assignment field in RPS element is set to 1. If the Access Restricted to Paged STAs Only bit in RPS element is set to 1, then the RA frame indicates the RAW slot assignment for paged STAs that are included in the RAW Group. The AP assigns a RAW slot to either an individual STA indicated by the Partial AID subfield or a group of STAs indicated by the Group ID subfield within the Slot Assignment field of the RA frame.

If the Access Restricted to Paged STAs Only bit in RPS element is set to 0 and an RA frame is broadcasted at RAW Start Time, then the STAs within the RAW Group may wake up to receive this frame in order to learn their assigned RAW slots for their UL and DL traffic and corresponding Slot Start Offsets. If the Access Restricted to Paged STAs Only bit in RPS element is set to 1 and an RA frame is broadcasted at RAW Start Time, only the paged STAs within the RAW Group may wake up to receive this frame in order to learn their assigned RAW slots for their DL traffic and corresponding Slot Start Offsets. The STAs may go back to sleep and wake up at their assigned RAW slots. In an assigned RAW slot, a STA may wait for DL traffic if the UL/ DL bit within the Slot Assignment field of the RA frame is set to 0. If the bit is set to 1, the STA starts to access the channel based on the method illustrated for RAW operation (see 9.19.4a.1), indicating that the AP has no DL buffered data for the STA. If a RAW slot is assigned to a group of STAs, the STAs may wait to receive DL traffic from the AP.

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Decision** |
| 898 | 41 | 8.3.4.15b | Better use "broadcasted" instead of "transmitted" as RA frame will not be sent to each STA individually. | Modify the sentence from "The Resource Allocation frame is transmitted to all STAs within a RAW Group ..." to "The Resource Allocation frame is broadcasted to all STAs within a RAW Group ...".  | Revised |

**Discussion**:

CID 898 suggests using the term “broadcasted” in place of “transmitted.”

**Proposed resolution**: I have revised the comment

**Instruction to the Editor**

***Please modify the paragraph in P41/L56 as follows:***

The Resource Allocation frame is ~~transmitted~~broadcasted at the beginning of a RAW to all STAs within a RAW Group (see 8.4.2.170b) to indicate presence of downlink buffered data for paged STAs and their assigned time slots for both uplink and downlink service periods. The Resource Allocation frame contains Frame Control, Duration, TA, BSSID, RAW Group, RAW Duration, Group Indicator, Slot Assignment, and FCS fields. The Resource Allocation frame format is illustrated in Figure 8-37g (Resource Allocation frame format).

***Please modify the paragraph in P42/L51 as follows:***

The RAW Duration field indicates the duration of the current RAW where the Resource Allocation frame is

~~transmitted~~broadcasted. The format of the RAW Duration field is defined in 8.4.2.170b (RPS element).