IEEE P802.11
Wireless LANs

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| LB 203 Comment Resolution for 8.4.2.170a and 9.21.5.4 |
| Date: 2014-9-1 |
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Abstract

This submission proposes resolutions for comments in clause 8.4.2.170a and 9.21.5.4 of TGah Draft 2.0 with the following CIDs:

* 3014, 3251, 3328

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Editorial changes

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.***

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| **CID** | **Clause** | **Page** | **Line** | **Comment**  | **Proposed change** | **Resolution** |
| 3014 | 8.4.2.170a | 127 | 21 | "The format of RAW Slot Definition subfield is shown"There are many, many, instances of missing articles. I don't have the time or energy to attempt to report them. | Get an expert copy editor to check through. Or hope the Publication editor does a good job. | **Revise**TGah editor to make the changes shown in 11-14/1105r1 under the heading CID 3014. |
| 3251 | 8.4.2.170a | 125 | 37 | The 9 paragraphs starting from P125L37 describe the "RAW Type" indication, and in some cases their combination with the RAW Type Options subfield. To make the organization clear make these paragraphs as L1 items (or L2 items when appropriate) of the following sentence: " The RAW Type subfield provides the following signaling::". Also replace "RAW type" with "RAW Type", and Sounding RAW with "Sounding/Report RAW" or "Feedback RAW". Use the same structure to organize the three paragraphs starting in P126L31, and the 4 paragraphs starting in P127L1 (making them items of the paragraph in P126L64). | As in comment throughout this subclause. | **Revise**TGah editor to make the changes shown in 11-14/1105r1 under the heading CID 3251. |
| 3328 | 9.21.5.4 | 264 | 64 | Instead of referring to the values of the RAW Type field and RAW Type Options field simply refer to Generic RAW, Non-TIM RAW etc for better readibility. | As in comment. | **Revise**TGah editor to make the changes shown in 11-14/1105r1 under the heading CID 3328 |

**Discussion:**

**None**

**CID 3014:**

TGah editor: modify the paragraph starting at Page 127, Line 52 of TGah Draft 2.1 as follows:

The format of the RAW Control subfield is shown in Figure 8-575a4 (RAW Control subfield format).

TGah editor: modify the paragraph starting at Page 129, Line 37 of TGah Draft 2.1 as follows:

The Start Time Indication subfield indicates whether RAW Start Time subfield is present in the RAW Assignment field or not. If it is equal to 0, the RAW Start Time subfield is not present. If it is equal to 1, the RAW Start Time subfield is present. In the first RAW Assignment, the Start Time Indication equal to 0 indicates that the RAW starts immediately after the S1G Beacon or the (Short) Probe Response frame that includes the RPS element. For ~~the~~ other RAW Assignments, the Start Time Indication subfield equal to 0 indicates that the current RAW starts immediately after the end of the previous RAW.

TGah editor: modify the paragraph starting at Page 130, Line 38 of TGah Draft 2.1 as follows:

The format of the RAW Slot Definition subfield is shown in Figure 8-575a5 (Format of RAW Slot Definition Subfields(#3930)).

TGah editor: modify the paragraph starting at Page 130, Line 52 of TGah Draft 2.1 as follows:

The Slot Definition Format Indication indicates the number of bits used for the Slot Duration Count subfield~~s~~, i.e., the value y in Figure 8-575a5 (Format of RAW Slot Definition Subfields(#3930))~~,~~ of the Slot Duration Count subfield.

TGah editor: modify the paragraph starting at Page 131, Line 21 of TGah Draft 2.1 as follows:

The RAW Duration indicates the duration, unsigned integer in microsecond, of the restricted medium access assigned to a RAW.

TGah editor: modify the paragraph starting at Page 131, Line 30 of TGah Draft 2.1 as follows:

The RAW Start Time subfield indicates the duration, in units of 2 TU, from the end of the S1G Beacon or the (Short) Probe Response frame transmission that includes the RPS element to the start time of the RAW.

TGah editor: modify the paragraph starting at Page 132, Line 32 of TGah Draft 2.1 as follows:

The PRAW Validity subfield indicates the number of periods that the PRAW repeats. The value of the PRAW Validity subfield is equal to the number of remaining PRAW occurrences, except when the PRAW Validity subfield is equal to 0 that indicates the PRAW validity value is not determined.

The PRAW Start Offset subfield indicates the offset value from the end of the frame that carries the current RPS element to the S1G Beacon frame that the first window of the PRAW appears, in units of short beacon interval.

**CID 3251:**

TGah editor: modify the 9 paragraphs starting at Page 128, Line 49 of TGah Draft 2.1 as follows:

~~When the RAW type is Generic RAW, it is used to provide restricted medium access only to a group of STAs.~~

~~When the RAW type is Sounding RAW, the RAW is either used for SST Sounding/SST Report (SST RAW) or Sector Sounding/Sector Report (Sector RAW).~~

~~When Sounding RAW is used as an SST Sounding RAW or a Sector Sounding RAW, non-AP STAs do not initiate a TXOP during the RAW but elect to listen to sector sounding (described in 9.42g.5.2 (Procedure)) or SST sounding (described in 9.42f (Subchannel Selective Transmission (SST))). Non-AP STAs are allowed to transmit response frames during the RAW.~~

~~When the Sounding RAW is used as an SST Report RAW or a Sector Report RAW, as a response to the preceding SST Sounding RAW or Sector Sounding RAW, single or multiple RAW(s) may be assigned as the SST Report RAW(s) or Sector Report RAW(s) by the AP, during which SST report or Sector report can be done by multiple STAs, regardless of their corresponding TIM bits.~~

~~When the RAW type is Simplex RAW, the RAW is either used for AP Power Management (as described in 10.2.2.20 (AP Power management)), for reserving channel time for non-TIM STAs, or for the omni RAW depending on the values of RAW Type Options subfield. For the Simplex RAW, Slot Definition Format Indication, Cross Slot Boundary, and Number of Slots subfields of the Slot Definition field are set to 1.~~

~~When the RAW is used as the non-TIM RAW as indicated by the RAW Type Options subfield, the access is restricted to non-TIM STAs that have been previously scheduled within the RAW such as TWT STAs or doze awake cycle rescheduled STAs (as described in 9.42b.2 (Rescheduling of awake/doze cycle)). The RAW Assignment subfield for non-TIM RAW also conditionally contains the RAW Start Time, Channel Indication, and Periodic Operation Parameters subfields.~~

~~When the RAW is used as the AP PM RAW as indicated by the RAW Type Options subfield, the RAW Assignment subfield for AP PM RAW also conditionally contains the RAW Start Time and Periodic Operation Parameters sub-subfields.~~

~~When the RAW is used as the omni RAW as indicated by the RAW Type Options subfield, the RAW Assignment subfield for omni RAW the access is not restricted for any specific STA and this duration can be used by all the STAs even to send the Probe/Association Request. The RAW assignment subfield of the omni RAW also conditionally contains the RAW Start Time, and Periodic Operation Parameters sub-subfields.~~

~~When the RAW type is Triggering Frame RAW, each paged STA belonging to the RAW group is allowed to send one specific trigger frame as described in 9.22.5.4 (Slotted channel access procedure in RAW) during its assigned slot. The procedure of slot assignment is described in 9.22.5.3 (Slot assignment procedure in RAW).~~

The different types of RAWs are interpreted as follows:

* Generic RAW: used to provide restricted medium access only to a group of STAs.
* Sounding RAW: either used for SST Sounding/SST Report (SST RAW) or Sector Sounding/Sector Report (Sector RAW) as indicated by the RAW Type Options subfield as follows:
* When the Sounding RAW is used as an SST Sounding RAW or a Sector Sounding RAW, non-AP STAs do not initiate a TXOP during the RAW but elect to listen to sector sounding (described in 9.42g.5.2 (Procedure)) or SST sounding (described in 9.42f (Subchannel Selective Transmission (SST))). Non-AP STAs are allowed to transmit response frames during the RAW.
* When the Sounding RAW is used as an SST Report RAW or a Sector Report RAW, as a response to the preceding SST Sounding RAW or Sector Sounding RAW, STAs in the RAW Group can transmit a report frame to the AP during the SST Report RAW as decribed in 9.47 (Subchannel Selective Transmission (SST)), or transmit sector ID feedback frame to the AP during the Sector Report RAW as described in 9.48.5 (Sector training operation), regardless of their corresponding TIM bits.
* Simplex RAW: the Slot Definition Format Indication, Cross Slot Boundary, and Number of Slots subfields of the Slot Definition field are set to 1, and the RAW is used for AP Power Management (as described in 10.2.2.20 (AP Power management)), for reserving channel time for non-TIM STAs, or for the omni RAW depending on the values of the RAW Type Options subfield as follows:
	+ When the RAW is used as the non-TIM RAW, the access is restricted to non-TIM STAs that have been previously scheduled within the RAW such as TWT STAs or doze awake cycle rescheduled STAs (as described in 9.42b.2 (Rescheduling of awake/doze cycle)). The RAW Assignment subfield for non-TIM RAW also conditionally contains the RAW Start Time, Channel Indication, and Periodic Operation Parameters subfields.
	+ When the RAW is used as the AP PM RAW, the RAW Assignment subfield for AP PM RAW also conditionally contains the RAW Start Time and Periodic Operation Parameters subfields.
	+ When the RAW is used as the omni RAW, the access is not restricted for any specific STA and this duration can be used by non-AP STAs to communicate with the AP that has scheduled the omni-RAW to send the Probe/Association Request. The RAW assignment subfield of the omni RAW also conditionally contains the RAW Start Time, and Periodic Operation Parameters subfields.
* Triggering Frame RAW: each paged STA belonging to the RAW group is allowed to send one specific trigger frame as described in 9.22.5.4 (Slotted channel access procedure in RAW) during its assigned slot. The procedure of slot assignment is described in 9.22.5.3 (Slot assignment procedure in RAW).

TGah editor: modify the 3 paragraphs starting at Page 129, Line 45 of TGah Draft 2.1 as follows:

~~When the RAW type is Generic RAW, Sounding RAW, or Triggering Frame RAW, the Same Group Indication indicates whether the RAW group defined in the current RAW Assignment is the same RAW group as defined in the previous RAW Assignment. When the Same Group Indication bit is equal to 1, the RAW group defined in the current RAW Assignment is the same as the RAW group defined in the previous RAW Assignment and the RAW Group subfield is not present in this RAW assignment. When the Same Group Indication bit is equal to 0, the RAW Group subfield is present in this RAW assignment. The Same Group Indication in the first RAW Assignment is set to 1 to indicate the RAW group in the first RAW Assignment is the same as the range of AIDs in all the TIM Bitmaps in the S1G Beacon frame.~~

~~When the RAW type is Simplex RAW, and the RAW is used as the non-TIM RAW as indicated by the RAW Type Options subfield, the Same Group Indication is always set to 1 and the RAW Group subfield is not present.~~

~~When the RAW type is Simplex RAW, and the RAW is used as AP PM RAW as indicated by the RAW Type Options subfield, the Same Group Indication is set to 1 to indicate that the RAW group does not include any of the non-AP STAs, and the RAW Group subfield is not present. When the Same Group Indication is equal to 0, the RAW Group subfield is present.~~

The Same Group Indication indicates whether the RAW Group subfield is present in the RAW Assignment field and is interpreted as follows:

* When the RAW is Generic RAW, Sounding RAW, or Triggering Frame RAW, the Same Group Indication indicates whether the RAW group defined in the current RAW Assignment is the same RAW group as defined in the previous RAW Assignment. When the Same Group Indication bit is equal to 1, the RAW group defined in the current RAW Assignment is the same as the RAW group defined in the previous RAW Assignment and the RAW Group subfield is not present in this RAW assignment. When the Same Group Indication bit is equal to 0, the RAW Group subfield is present in this RAW assignment. The Same Group Indication in the first RAW Assignment is set to 1 to indicate the RAW group in the first RAW Assignment is the same as the range of AIDs in all the TIM Bitmaps in the S1G Beacon frame.
* When the RAW is Non-TIM RAW, the Same Group Indication is set to 1 and the RAW Group subfield is not present.
* When the RAW is AP PM RAW, the Same Group Indication equal to 1 indicates that the RAW group does not include any of the non-AP STAs, and the RAW Group subfield is not present. When the Same Group Indication is equal to 0, the RAW Group subfield is present.

TGah editor: modify the 5 paragraphs starting at Page 130, Line 15 of TGah Draft 2.1 as follows:

The definitions of RAW Type Options subfield are specified in Table 8-258a1 (Interpretation of RAW Type and RAW Type Options). The RAW Type Options subfield is interpreted as follows:

~~When the RAW Type is Generic RAW, Bit 0 of the RAW Type Options (Bit 6 of the RAW Control subfield) is Paged STA indication. When it is equal to 0, the RAW can be accessed by any STA (paged or unpaged) within the RAW group specified by the RAW Group subfield. When it is equal to 1, the RAW can only be accessed by paged STAs within the RAW group specified by the RAW Group subfield. Bit 1 of the RAW Type Options (B7 of the RAW Control subfield) is RA Frame Indication. If it is equal to 1, the AP will transmit a Resource Allocation frame, as defined in 8.8.5.4 (Resource Allocation frame format), at the beginning of the RAW defined by the RAW Assignment field of the RPS element.~~

~~When RAW Type is Sounding RAW, the RAW Type Option is treated as one subfield, the interpretation of which is defined in Table 8-258a1 (Interpretation of RAW Type and RAW Type Options).~~

~~When the RAW Type is Simplex RAW, the RAW Type Options subfield is treated as one subfield, the interpretation of which is defined in Table 8-258a1 (Interpretation of RAW Type and RAW Type Options).~~

~~When the RAW Type is Triggering Frame RAW, the RAW Type Option subfield is reserved.~~

* For Generic RAW, Bit 0 of the RAW Type Options (Bit 6 of the RAW Control subfield) is Paged STA indication. When it is equal to 0, the RAW can be accessed by any STA (paged or unpaged) within the RAW group specified by the RAW Group subfield. When it is equal to 1, the RAW can only be accessed by paged STAs within the RAW group specified by the RAW Group subfield. Bit 1 of the RAW Type Options (Bit 7 of the RAW Control subfield) is RA Frame Indication. If it is equal to 1, the AP will transmit a Resource Allocation frame, as defined in 8.8.5.4 (Resource Allocation frame format), at the beginning of the RAW defined by the RAW Assignment field of the RPS element.
* For Sounding RAW, the RAW Type Option is treated as one subfield, the interpretation of which is defined in Table 8-258a1 (Interpretation of RAW Type and RAW Type Options).
* For Simplex RAW, the RAW Type Options subfield is treated as one subfield, the interpretation of which is defined in Table 8-258a1 (Interpretation of RAW Type and RAW Type Options).
* For Triggering Frame RAW, the RAW Type Option subfield is reserved.

**CID 3328:**

TGah editor: modify the paragraphs starting at Page 264, Line 31 of TGah Draft 2.1 as follows:

When the RAW is not restricted to STAs whose AID bits in the TIM element are equal to 1 (the RAW ~~Type field is equal to 0~~ is a Generic RAW and the ~~Bit 0 of the RAW Type Options field~~ Paged STA indication is equal to 0), all STAs that belong to a RAW group are allowed to access the medium in the RAW of the RAW group, an AP assigns a time slot for each STA that belongs to the RAW group (9.22.5.3 (Slot assignment procedure in RAW)). Each STA that belongs to the RAW group shall start to contend for the WM not earlier than the start of the assigned time slot. The channel access is based on EDCA.

When the RAW is restricted to STAs whose AID bits in the TIM element are equal to 1 (the RAW ~~Type field is equal to 0~~ a Generic RAW and the ~~Bit 0 of the RAW Type Options field~~ Paged STA indication is equal to 1 or the ~~RAW Type field is equal to 3~~ RAW is a Triggering Frame RAW), paged STAs only are allowed to access the medium in the RAW, after receiving a TIM element, the paged STA starts to contend for the WM not earlier than the allocated time slot within the RAW defined as the function of STA position in the TIM element and the RAW group information in the RPS element (9.22.5.3 (Slot assignment procedure in RAW)), and non-paged STAs are not allowed to access the RAW.

AP may designate a RAW for trigger frames by setting the RAW type ~~subfield of the RPS element to 3 (Triggering Frame RAW)~~ to Triggering Frame RAW. When the RAW type is Triggering Frame RAW, each paged STA in the RAW Group is allowed to send up to one triggering frame during its assigned slot as described in 9.22.5.3 (Slot assignment procedure in RAW). In the Triggering Frame RAW, a trigger frame is limited to a QoS Null (no data) contained in a non-A-MPDU frame or a (NDP) PS-Poll frame. In the Triggering Frame RAW, the STA transmits a trigger frame to the AP not earlier than the start of its assigned RAW slot. The duration of the trigger frame exchange sequence shall not exceed a slot duration calculated by the RAW Slot Definition Subfield in the RAW Assignment field of the RPS element. And, in the Triggering Frame RAW, crossing slot boundary is not allowed.