IEEE P802.11
Wireless LANs

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| LB200 TGah D1.0 MAC Comment Resolutions on Sectorization Part 2 |
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This document provides resolutions for MAC CIDs on Sectorization (Part 2):

CID 2924 and 2534

| **CID** | **Commenter** | **Page** | **Clause** | **Assignee** | **Comment** | **Proposed Change** | **Resolution** |
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| 2924 | Young Hoon Kwon | 205.06 | 9.47.5.4 | Jae Seung, James, Younghoon | Sector Report RAW is not defined in 8.4.2.170b. It needs further clarification. | As mentioned in the Comment. | REVISED. Refer to doc. 14/0659. |
| 2534 | Minho Cheong | 85.00 | 8.4.2.170b | Jae Seung, Yuan | Reporrt RAW which efficiently responds to the sounding RAW needs to be defined | Define Report RAW as an sub-mode of sounding RAW indication | REVISED. Refer to doc. 14/0659. |
| <Discussion>As the commnters pointed out, Sector Report RAW (which is already introduced in the draft) needs to be clarified in more detail. It seems good to define Sector Report RAW as one of sub-mode of Sounding RAW because Sounding RAW and Report RAW have very coupled relation each other (Report RAW is definitely subordiniate to Sounding RAW, while STA’s behaviour in each RAW is quite different). FYI, Report RAW may have STAs in it as a subset of those of the initiating Sounding RAW. Sector Report RAW (which may be generally just after the Sounding RAW) is very efficient & useful for fast discovery of **“multiple”** STAs at the same time (by quite reducing their air-time occupation and potential contentions compared to being mixed with other normal data delivery frames within a Generic RAW or outside a RAW. Unlike Triggering Frame RAW, during which each paged STA is allowed to send, during Report RAW, the AID range of STAs which are allowed to send is originally inherited from that of the preceding Sounding RAW due to its subordinate nature to the Sounding RAW (regardless of their corresponding TIM bits set).  |
|  **TGah editor: modify the D1.3 text from P089L52, as follows**

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| Table 8-240b - Interpretation of RAW Type and RAW Type Options  |
| RAW Type | Description | RAW Type Options Subfield |
| Bit 0 | Bit 1 |
| 0 | 0 | The RAW is a Generic RAW. | Bit 0: Paged STABit 1: RA Frame |
| 0 | 1 | The RAW is a Sounding RAW. | 0: SST RAW* Used as an SST Sounding RAW if Slot Definition Format Indication is set to 0.
* Used as an SST Report RAW if Slot Definition Format Indication is set to 1.

1: Sector RAW* Used as a Sector Sounding RAW if Slot Definition Format Indication is set to 0.
* Used as a Sector Report RAW if Slot Definition Format Indication is set to 1.

2, 3: Reserved |
| 1 | 0 | The RAW is a Simplex RAW. | 0: AP PM RAW1: Non-TIM RAW2: Omni RAW 3: Reserved |
| 1 | 1 | The RAW is a Triggering Frame RAW. | Reserved |

When the RAW type is Generic(#1117) 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 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 9.48.5.2 (Procedure)) or SST sounding (described in 9.47 (Subchannel Selective Transmission (SST))). Non-AP STAs are allowed to transmit response frames during the RAW(#1119, 1120, 1121, 1386, 1387, 2730, 2731, 2889, 2890).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 set.  |
| **TGah editor: modify the D1.3 text from P92L15, as follows (under the Figure 8-401m – Format of RAW Slot Definition Subfields)** The Slot Definition Format Indication(#14/0035r1) indicates the number of bits used for Slot Duration Count subfields, i.e. the value y in Figure 8-401m (Format of RAW Slot Definition Subfields), of the Slot Duration Count subfield. If it is set 0, the Slot Duration Count subfield is 8 bits in length (y=8). If it is equal(#1185) to 1, the Slot Duration Count subfield is 11 bits in length (y=11). When the RAW Type is Sounding RAW, the Slot Duration Count subfield is always 8 bits in length (y=8) regardless of the Slot Definition Format Indication and the Slot Definition Format Indication is used to indicate whether the Sounding RAW is used for SST Sounding/SST Report or Sector Sounding/Sector Report as defined in Table 8-240b (Interpretation of RAW type and RAW Type Options). |
| **TGah editor: modify the D1.3 text from P246L60, as follows (in 9.47 SST)**The AP may signal the presence of a RAW for the purpose of SST sounding for a group of STAs using an SST sounding RAW as indicated within a transmitted RPS information element. Such an SST Sounding RAW may be scheduled for periodic or non-periodic operation. An additional RAW(s) may be scheduled as SST Report RAW(s) (see 8.4.2.170a (RPS element)) after the SST Sounding RAW for the transmission of NDP frames (e.g., NDP PS-Poll) by SST STAs on their selected channel(s) for the purpose of communicating a selected subchannel to the AP. In the SST Report RAW, the STA transmits a report frame to the AP not earlier than the start of its assigned RAW slot, followed by the AP’s response for confirmation after SIFS.When the RAW Type is Sounding RAW, the RAW Type Options subfield is equal(#1185) to SST RAW, and the Slot Definition Format Indication indicates that the RAW is used for SST Sounding in the RPS information element (See 8.4.2.170a (RPS element)) transmitted by the AP, the SST sounding sequence within the SST Sounding RAW comprises a series of PIFS-separated NDP frames (e.g., NDP CTS frames), each transmitted on one of the channels among those indicated by the Channel Indication field of the RAW, starting with lowest frequency channel. Non-AP STAs are prohibited from transmitting during the RAW but SST-capable devices may listen to the sounding sequence that is transmitted during the RAW. |
| **TGah editor: modify the D1.3 text from P256L54, as follows (in 9.48.5 Sector training operation)**AP may schedule sector sounding for multiple STAs by RAW in a beacon interval using the RAW Parameter Set element with the RAW Type field equal(#1185) to Sounding RAW, the RAW Type Options subfield equal(#1185) to Sector RAW, and the Slot Definition Format Indication indicates that the RAW is used for Sector Sounding (see 8.4.2.170a (RPS element)). During the Sector Sounding RAW, non-AP STAs are prohibited to transmit but can elect to listen to the sector training for the entire RAW. This SST Sounding RAW may be scheduled as periodic or non-periodic.The sector training within the Sector Sounding RAW starts with a frame with NDP announcement indicator equal(#1185) to 1 in the HT control field and is followed in SIFS by a number of NDP CTS frames, each transmitted through different antenna sector starting with Sector ID equal to 0, and separated by SIFS. If the RAW Type, the RAW Type Options Subfield, and the Slot Definition Format Indication do not indicate that the RAW is a Sector Sounding RAW, no sector sounding is performed within the RAW. |
| **TGah editor: modify the D1.3 text from P257L10, as follows****9.48.5.4 Fast Sector Discovery**When multiple STAs report their sector IDs using the Sector ID feedback frames to AP, Sector ID feedback frames may be protected by Sector Report RAW(s) (see 8.4.2.170a (RPS element)) indicated in the beacon to avoid contentions with others. The Sector Report RAW(s) may be assigned after the Sector Sounding RAW for fast sector discovery of multiple STAs.In the Sector Report RAW, the STA transmits a report frame to the AP not earlier than the start of its assigned RAW slot, followed by the AP’s response for confirmation after SIFS.  |