IEEE P802.11  
Wireless LANs

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| LB236 S1G related MAC comment resolutions | | | | |
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Abstract

This submission proposes resolutions of comments received from TGmd LB236.

(The proposed change is based on TGmd Draft 2.0.)

* CIDs: 2561, 2411, 2490, 2001, 2308, 2435, 2265, 2515, 2303, 2405, 2516, 2517, 2518, 2519, 2315, 2663, 2377, 2397, 2314 (19 CIDs)
* NOTE: In 11-19/549r2, 2308, 2435, 2303, 2517, 2518, and 2314 have been discussed.

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| **CID** | **Commenter** | **Clause Number** | **Page** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 2561 | Mark RISON | 9.2.3 | 774 | 50 | "For PV1 MPDUs, the fields constituting the minimal frame format are defined in 9.8 (MAC frame format for PV1 frames(11ah))." -- no, they're not (at least not explicitly/clearly) | Change to "the first field (Frame Control, and the last field (FCS) constitutes the minimal frame format" | Revised-  In 9.8.2 (General PV1 frame format), the spec says,  “The first three fields (Frame Control, A1 and A2) and the last field FCS are always present in PV1 frames. The Sequence Control, A3, A4 and Frame body fields are optionally present.”  TGmd Editor changes the reference of the cited sentence from 9.8 (MAC frame format for PV1 frames(11ah)) to 9.8.2 (General PV1 frame format). |
| 2411 | Mark RISON | 9.4.1.48 | 933 | 23 | "In an S1G PPDU, the Nr Index field does not indicate a value that is greater than 4. The value 0 is reserved." is potentially confusing as it might be read as saying 0 is only reserved in an S1G PPDU. | Swap the two cited sentences at the referenced location | Accepted |
| 2490 | Mark RISON | 9.4.1.48 | 933 | 16 | "In an S1G PPDU, the Nc Index field does not indicate a value that is greater than 4." -- not clear whether this is about the value or the Nc | Change the cited text at the referenced location to "In an S1G PPDU, the Nc Index field does not indicate an Nc that is greater than 4.", italicising the second Nc. Change the penultimate sentence of the next cell down to "In an S1G PPDU, the Nr Index field does not indicate an Nr that is greater than 4.", italicising the second Nr | Accepted |
| 2001 | Abhishek Patil | 9.4.2.5.1 | 983 | 45 | Is the structure shown in Fig 9-152 applicable to non-S1G cases too? From the description in the paragraph above the figure (P983L14), it seems like the page structure applies only to S1G case. | Clarify in the description text and in the figure title that the structure shown in Fig 9-152 is only applicable when the TIM element is carried in an S1G PPDU | Revised-  Agree in principle.  Figure title and description have been updated based on the comment.  TGmd editor makes changes as specified in 11-19/0549r1 for CID 2001. |
| **Proposed Text Updates: CID 2001**  ***TGmd Editor: Change the sub-clause 9.4.2.5.1 (General) as the following:***  When the TIM is carried in a non-S1G PPDU(11ah), the traffic indication virtual bitmap, maintained by the AP or the mesh STA that generates a TIM, consists of 2008 bits, and it is organized into 251 octets such that bit number *N* (0  *N*  2007) in the bitmap corresponds to bit number (*N* mod 8) in octet number *N* / 8 where the low-order bit of each octet is bit number 0, and the high order bit is bit number 7. When the TIM is carried in an S1G PPDU, the traffic-indication virtual bitmap has the hierarchical structure shown in Figure 9-152 (Hierarchical structure of traffic-indication virtual bitmap carried in an S1G PPDU (11ah)), consists of 64*NPNB* bits and is organized into *NP* pages where each page consists of *NB* blocks, each block consists of eight subblocks, and each subblock consists of 8 bits (*NP*=4 and *NB*=32). Bit number *N* in the bitmap corresponds to bit number *N*[0:2] of the *N*[3:5]-th subblock of the *N*[6:5+*n*1]-th block of the *N*[6+*n*1:12]-th page, where *n*1 is log2*N*B and *N*B is power of 2. *N*[*a*:*b*] represents bits *a* to *b* inclusive of the bit number *N*. ~~The hierarchical structure of the traffic-indication virtual bitmap is as shown in Figure 9-152 (Hierarchical structure of traffic-indication virtual bitmap(11ah)).(11ah)~~ Each bit in the traffic indication virtual bitmap corresponds to traffic buffered for a spe-cific neighbor peer mesh STA within the MBSS that the mesh STA is prepared to deliver[[1]](#footnote-1) or for a STA within the BSS that the AP is prepared to deliver at the time the Beacon frame is transmitted. Bit number *N* indicates the status of buffered, individually addressed MSDUs/MMPDUs for…  ***TGmd Editor: Change the title of Figure 9-152 as the following:***  Figure 9-152—Hierarchical structure of traffic-indication virtual bitmap carried in an S1G PPDU (11ah) | | | | | | | |
| 2308 | Mark RISON | 9.9 | 1670 | 1 | As regards NDP CMAC frames, I think per F23-18 and F23-19 that these are some kind of PPDU, not an MPDU. I guess the only way these can be thought of is as being a zero-length PSDU (with associated TX/RXVECTOR). But it's not clear whether they obey some of the rules for MPDUs, e.g. rate selection or backoff | At the end of 9.9.1 add "NDP CMAC frames are not MPDUs but NDPs, but they obey the rules for equivalent MPDUs, as shown in Table 9-538." In Table 9-538 add a column "Equivalent MPDU" and then for values 0 to 7 respectively say "CTS or CF-End", PS-Poll, Ack, "Ack to PS-Poll", BlockAck, Beamforming Report Poll, Action, Probe Request | Rejected-  The spec already has the following definition fo the NDP CMAC frame.  “null data PPDU (NDP) carrying medium access control information (CMAC) frame: A physical layer (PHY) protocol data unit (PPDU) with no Data field used by the PHY to provide to the medium access control (MAC) the service of carrying MAC information in the SIGNAL field of the sub 1 GHz (S1G) PPDU.”  Also, the spec has the related behaviours for each NDP CMAC frame, in clause 10 and 11, not clause 9.  But, if you find some behavior texts that are not clealy defined for the NDP CMAC frames, please submit the follow-up comments. |
| 2435 | Mark RISON | 9.9.2.6 | 1678 | 1 | Despite them being acked with an NDP BlockAck, F-MPDUs are never sent in a non non-A-MPDU (i.e. they are never aggregated with other MPDUs in the same PPDU, they are always sent in a non-A-MPDU). This is rather confusing. | Change the subclause heading from "NDP BlockAck" to "NDP Fragment Ack" | Rejected-  Initially, the BlockAck protocol was made before having A-MDPU.  If singe frame can feedback receptations of more than one MPDUs, that we can say it as the BlockAck. |
| 2265 | Mark Hamilton | 10.2.7 | 1692 | 43 | Per P1735.39, an S1G relay STA is excepted from the dot11GroupAddressesTable matching and filtering rule. However, this is not described at P1692.43 | Change "The MAC performs" to "A MAC not contained within an S1G relay performs" | Accepted |
| 2515 | Mark RISON | 10.3.2.4 | 1701 | 56 | " and the RA is not equal to the MAC address of the S1G STA" is already stated in the second para | Delete the cited text at the referenced location | Accepted |
| 2303 | Mark RISON | 10.3.2.12 | 1717 | 21 | Should not duplicate requirements already given elsewhere | Delete "An originator STA may send F-MPDUs with Block Ack ack policy. A recipient STA shall not send any frame as an immediate response to an F-MPDU with Block Ack ack policy. An originator STA may solicit an immediate response following an F-MPDU by setting the ack policy of the eliciting F-MPDU to Implicit BAR.(#1415)" | Rejected-  Before 11ah, a fragment can’t be sent with the Block Ack ack policy.  It seems that the cited text is not a duplicate requirement.  The commenter should provide why the cited text is a duplicate requirement. |
| 2405 | Mark RISON | 10.3.2.12 | 1717 | 6 | We don't need to define the concept of a fragment MPDU (F-MPDU) as being an MPDU that contains a fragment of an MSDU or of an MMPDU, since 10.4 already defines a fragment as being "an MPDU, the Frame Body field of which carries (#1452)only a portion of an MSDU or MMPDU" | In 10.3.2.12, delete "In this subclause a fragment MPDU (F-MPDU) is an MPDU that contains a fragment of an MSDU or of an MMPDU. " and then change each "F-MPDU[s]" to "fragment[s]" | Accepted |
| 2516 | Mark RISON | 10.3.2.17 | 1726 | 25 | Normal response is also used for things like Action frames | After "The ack policy of at least one of the MPDUs in the PPDU is Normal Ack or Implicit BAR" add "or the PPDU otherwise contains MPDUs that solicit an immediate acknowledgment (e.g. Action frames)" | Revised-  Agree in principle.  But, the proposed new text is a superset of the existing text.  TGmd Editor changes in Table 10-7 the following  “The ack policy of at least one of the MPDUs in the PPDU is Normal Ack or Implicit BAR.”  with  “At least one of the MPDUs in the PPDU solicits an immediate acknowledgement, (e.g., a QoS Data frame whose ack policy is Normal Ack or Implicit BAR; or an Action frame).” |
| 2517 | Mark RISON | 10.3.2.17 | 1726 | 6 | No response is also used for things like Action No Ack frames | After "The ack policy of none of the MPDUs in the PPDU is Normal Ack or Implicit BAR (see 9.2.4.5.4 (Ack Policy Indicator subfield(#1415)) and 9.8.3.1 (Frame Control field))" add "and the PPDU otherwise does not contain MPDUs that solicit an immediate acknowledgment (e.g. it does not contain Action frames)" | Revised-  Agree in principle.  But, the proposed new text is a superset of the existing text.  TGmd Editor changes in Table 10-7 the following  “The ack policy of none of the MPDUs in the PPDU is Normal Ack or Implicit BAR (see 9.2.4.5.4 (Ack Policy Indicator subfield(#1415)) and 9.8.3.1 (Frame Control field)).”  with  “None of the MPDUs in the PPDU solicits an immediate acknowledgement (e.g., a QoS Data frame whose ack policy is neither Normal Ack nor Implicit BAR (see 9.2.4.5.4 (Ack Policy Indicator subfield(#1415)) and 9.8.3.1 (Frame Control field)), Action No Ack frame).” |
| 2518 | Mark RISON | 10.3.2.17 | 1726 | 12 | It is not clear whether in some circumstances an NDP response might be used | After "The ack policy of at least one of the MPDUs in the PPDU is Normal Ack or Implicit BAR" add "or the PPDU otherwise contains MPDUs that solicit an immediate acknowledgment (e.g. Action frames)" | Revised-  Agree in principle.  But, the proposed new text is a superset of the existing text.  TGmd Editor changes in Table 10-7 the following  “The ack policy of at least one of the MPDUs in the PPDU is Normal Ack or Implicit BAR.”  with  “At least one of the MPDUs in the PPDU solicits an immediate acknowledgement, (e.g., a QoS Data frame whose ack policy is either Normal Ack or Implicit BAR, Action frame).” |
| 2519 | Mark RISON | 10.3.2.17 | 1726 | 18 | The xref for NDP BA is given as 10.3.2.12 but the xref for BA is given as 10.3.2.11 | At the referenced location change "10.3.2.12" to "10.3.2.11" | Rejected-  10.3.2.11 is an acknowledgment procedure.  The procedure is never used in the NDP BA procedure. |
| 2315 | Mark RISON | 10.6.12 | 1766 | 19 | It is not clear what a "non-NDP S1G Control response frame" is | Change "non-NDP S1G Control response frame" to "control response frame that is not an NDP CMAC frame" (2x) | Revised-  Agree in principle.  But, since the S1G Control frame already is defined as non-NDP, it is not necessary to say “non-NDP” again.  Please refer the definition of the S1G Control frame in 9.2.4.1.1 (General).  “The Control frames carried by S1G PPDUs are called S1G Control frames”.  Because the NDP frame does not have a Data field, the Control frame can’t be carried.  TGmd editor makes changes as specified in 11-19/0549r1 for CID 2315. |
| **Proposed Text Updates: CID 2315**  ***TGmd Editor: Change the sub-clause 10.6.12 (Channel Width in non-HT and non-HT duplicate PPDUs) as the following:***  An S1G STA transmitting an ~~non-NDP~~ S1G Control ~~response~~ frame that is sent as a response to an S1G Control frame shall set the Bandwidth Indication field in the Frame Control field of the frame to the value of the Bandwidth Indication field in the Frame Control field of the eliciting frame, except for an S1G STA that has indicated the use of 1 MHz control response frames (see 10.6.6.6 (Channel Width selection for Control frames)) in which case the Bandwidth Indication field in the Frame Control field of the ~~non-NDP~~ solicited S1G Control ~~response~~ frame shall be set to 0. | | | | | | | |
| 2663 | Menzo Wentink | 10.55.2 | 2086 | 44 | Combining multiple triggering events in a single Reachable Address Update frame may currently not be allowed. | Add "Because the generation of a Reachable Address Update frame might not be immediate, Reachable Address subfields associated with multiple of the above conditions may be combined in a single Reachable Address Update frame.", or something along those lines. (See also 11-18-1968-02-000m-comment-resolution-for-cid-1263.docx.) | Revised-  Agree in principle.  But, multiple Reachable Address subfields which are triggered from the same relay STA should not be combined.  TGmd editor makes changes as specified in 11-19/0549r1 for CID 2663. |
| **Proposed Text Updates: CID 2663**  ***TGmd Editor: Change the sub-clause 10.55.2 (S1G Relay operation) as the following:***  The Reachable Address Update frame shall not contain Reachable Address subfields other than those defined for conditions 1-3 above. Because the generation of a Reachable Address Update frame might not be immediate, Reachable Address subfields which have different initiator MAC addresses may be combined in a single Reachable Address Update frame under the above conditions. | | | | | | | |
| 2377 | Mark RISON | 10.55.6 | 2093 | 5 | " Relay STA Count" -- no such field | Change " Relay STA Count or Channel Utilization" to "relay station count or channel utilization" at the referenced location | Accepted |
| 2397 | Mark RISON | 11.1.3.10.4 | 2124 | 45 | 11.1.3.10.4 Passive scanning with S1G Beacon If the ScanType parameter indicates a passive scan, the S1G STA shall listen to each channel scanned for no longer than a maximum duration defined by the MaxChannelTime parameter. is duplicate of 11.1.4.2.1 Passive scanning for non-DMG STAs | Delete Subclause 11.1.3.10.4 | Accepted |
| 2314 | Mark RISON |  |  |  | The concept "S1G Control frame" is unnecessary, since it's just a Control frame (that happens to be send in an S1G PPDU, but that's the only thing an S1G STA can send anyway). Futhermore, it leaves it unclear whether all the rules that pertain to vanilla Control frames also apply to S1G Control frames, though presumably they do. Oh, and it's confusing with dot11S1GControlFieldOptionImplemented | Delete "S1G" in "S1G Control" (changing "an" to "a" if preceding) throughout except as stated in the following.  In 9.2.4.1.1 delete "The Control frames carried by S1G PPDUs are called S1G Control frames." and change "The Frame Control field of S1G Control frames is defined in 9.3.1.1 (Format of Control frames)." to "For a frame carried in an S1G PPDU, when the value of the Type subfield is equal to 1, the format of the Frame Control  field  is defined in 9.3.1.1 (Format of Control frames)."  In 9.3.1.1 change "S1G Control frame" to "Control frame carried in an S1G PPDU" (6x) | Rejected-  The S1G Control frame is not same with a Control frame sent by legacy STA.  As shown in 9.3.1.1 (Format of Control frames), the Frame Control field subfield values of the S1G Control frame has been redefined.  It can be considered as almost new kind of control frame. |

1. How the AP or mesh STA determines the traffic is prepared to deliver is outside the scope of this standard. [↑](#footnote-ref-1)