IEEE P802.11
Wireless LANs

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| Comment Resolution for Subclause 8.2.4.5.4, 8.2.4.6.3, 8.2.4.7.1 |
| Date: 2014-01-23 |
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Abstract

This submission proposes resolutions for comments in clause 8.2.4.5.4, 8.2.4.6.3, 8.2.4.7.1 of TGah Draft 1.0 with the following CIDs: 1045, 1633, 1674, 2077, 2078, 2374, 2507, 2510, and 2556.

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 Num** | **P** | **L** | **Comment** | **Propose Change** | **Resolution** |
| 1045 | 8.2.4.6.3 | 35 | 53 | "For an S1G STA operating in the S1G band," - when does an S1G STA not operate in the S1G band? | Remove the tautology. | Agree in principle.Revised.TGah editor to make changes shown in 11-14-172 |
| 1633 | 8.2.4.6.3 | 35 | 53 | "For an S1G STA operating in the S1G band" seems redundant. Why would an S1G STA be operating in a different band and if it was would its behavior change? | Remove "operating in the S1G band," | Agree.TGah editor to make changes shown in 11-14-172 |
| 1674 | 8.2.4.5.4 | 35 | 31 | Names of procedures do not use initial caps. | Replace "Fragment" with "fragment". | Agree.TGah editor to make changes shown in 11-14-172 |
| 2077 | 8.2.4.6.3 | 35 | 53 | "operating in the S1G band" should be redundant and is inconsistent with the para above | Delete redundant part which needs to go away because it is duplicating information | Agree in principle.Revised.TGah editor to make changes shown in 11-14-172 |
| 2078 | 8.2.4.6.3 | 35 | 53 | Does "For an S1G STA" mean the same as "When dot11S1GOptionImplemented is true" (used later)? If so, why express it two different ways? (Actually, there appears to be yet more ways of expressing this, used interchangeably in different parts of the MAC.) | Decide how to write parts specific to S1G | Agree in principle.Revised.TGah editor to make changes shown in 11-14-172 |
| 2374 | 8.2.4.5.4 | 35 | 5 | A frame can be both "a non-AMPDU frame" and "a fragment", so the rules are now in conflict; ditto Table 8-301c | Address the conflict, e.g. by adding "where the originator and addressed recipient do not both support FB" | Agree in principle. In subclause 8.2.4.5.4 and 8.7.3, do the changes that the comenter asked. In subclause 9.3.2.9a, remove the contradiction because of the changes in 8.2.4.5.4 and 8.7.3.Revised.TGah editor to make changes shown in 11-14-172 |
| 2507 | 8.2.4.5.4 | 35 | 30 | How do I know when a frame is a fragment? I.e. when FRAG=0000b, is the frame a fragment or not? |  | Reject.When FRAG=0000b and More Fragments=0, the related frame is not a fragment. When FRAG=0000b and More Fragments=1, the related frame is a fragment. |
| 2510 | 8.2.4.6.3 | 35 | 53 | Again, I have a serious issue with the idea tha the format of frames varies depending on the attached PHY and is not signaled within the frame itself. Imagine an implementation that supports both 11ac and 11ah and has state machine flow to process a received frame and respond to that reception. If the device is operating as 11ac, then the flow follows a certain path, but if the device switches operating band, then there must be a completely different path that is enabled for processing the frame contents, even though the larger decisions are probably the same - e.g. generating a response, sending the frame to a buffer, etc. It feels like there will be a lot of duplicated state machine states and paths becuase of this. Maybe it is not so bad as i think, because one can have a single signal in the design that indicates S1G or not, and this would be an input to many state transitions throughout the design. | Redefine all frames for S1G that are distinct from existing frames (if they need to be different) using explicit, in-frame bits to indicate the different format, rather than defining those S1G frames to have differing field definitions based on the attached PHY. | Agree in principle.VHT Control field can be used in many Data/Management/Control frames. It is difficult to redefine all frames for S1G to differentiate from existing frames. However we can use the reserved bit in VHT Control field to differentiate VHT Control field for VHT from for S1G.Revised.TGah editor to make changes shown in 11-14-172. |
| 2556 | 8.2.4.7.1 |  |  | A Table 8-13c (Maximum data unit sizes (in octets) and durations (in microseconds)) needs to be modified to support S1G STA. | Insert the subclause 8.2.4.7 (Frame Body field) and 8.2.4.7.1 (General), and modify the Table 8-13c by adding a new column corresponding to S1G STA.. | Reject. We believe The values under column “**Non-HT non-VHT non-DMG PPDU and non-HT****duplicate PPDU**” in Table 8-13c are the values for 802.11ah. |

Comment 2374 Discussion:

* QoS Control field
* Ack Policy subfield

***Change Table 8-10 (Ack Policy subfield in QoS Control field of QoS Data frames) as follows (REVmc D1.1):***

|  |
| --- |
| * Ack Policy subfield in QoS Control field of QoS Data frames
 |
| Bits in QoS Control field | Meaning |
| Bit 5 | Bit 6 |
| 0 | 0 | Normal Ack or Implicit Block Ack Request.* Merge of .11ad change with CID 225 resolution.

In a frame that is a non-A-MPDU frame where neither the originator nor the addressed recipient support Fragment BA procedure:The addressed recipient returns an ACK or QoS +CF-Ack frame after a shortinterframe space (SIFS) period, according to the procedures defined in 9.3.2.8 (ACKprocedure) and 9.20.3.5 (HCCA transfer rules). A non-DMG STA sets the Ack Policysubfield for individually addressed QoS Null (no data) frames(11ad) to thisvalue.In a frame that is part of an A-MPDU:The addressed recipient returns a BlockAck frame, either individually or aspart of an A-MPDU starting a SIFS after the PPDU carrying the frame, according tothe procedures defined in 9.3.2.9 (Block Ack(Ed) procedure), 9.22.7.5 (Generationand transmission of BlockAck frames by an HT STA or DMG STA),9.22.8.3 (Operation of HT-delayed Block Ack), 9.26.4 (Rules for RD initiator), 9.26.5(Rules for RD responder), and 9.30.3 (Explicit feedback beamforming).In a frame that is a fragment:When both the originator and the addressed recipient support the fragment BA procedure, the addressed recipient returns an NDP BlockAck frame after a SIFS period, according to the procedure defined in 9.3.2.9a (Fragment BA procedure). |

* HT Control field
* VHT variant

***Change the first paragraph, second paragraph and figure 8-8a as following:***

The format of the HT Control Middle subfield of the VHT variant HT Control field is shown in Figure 8-8a.

 B1 B2 B3 B5 B6 B8 B9 B23 B24 B26 B27 B28 B29

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S1G | MRQ | MSI/STBC | MFSI/GID-L | MFB | GID-H | Coding Type | FB TX Type | Unsolicited MFB |

Bits: 1 1 3 3 15 3 1 1 1

**Figure 8-8a—HT Control Middle subfield of the VHT variant HT Control field**

The subfields of VHT variant HT Control field are defined in Table 8-13a (VHT variant HT Control field subfields). A VHT STA always sets the S1G subfield to 0 and a S1G STA always set the S1G subfield to 1.

***Change the format of the MFB subfield as follows:***

For a non-S1G STA, t~~T~~he format of the MFB subfield in the VHT variant HT Control field is shown in Figure 8-8c.

***Insert the following after Figure 8-8c MFB subfield in the VHT variant HT control field:***

For an S1G STA, the format of the MFB subfield in the VHT variant HT Control field is shown in Figure 8-8c1 (MFB subfield in the VHT variant HT Control field when used in S1G band).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B9 B10 | B11 B14 | B15 B17 | B15 B23 |
|  | NUM\_STS | VHT-MCS | BW | SNR |
| Bits: | 2 | 4 | 3 | 6 |
| * MFB subfield in the VHT variant HT Control field when used in S1G band
 |

***Change the definition of the BW subfield of the following table (Table 8-13b in TGaf D3.0) as follows:***

|  |
| --- |
| * MFB subfield in the VHT variant HT Control field
 |
| **Subfield** | **Meaning** | **Definition** |
| BW | Bandwidth of the recommended VHT-MCS | If the Unsolicited MFB subfield is 1, the BW subfield indicates the bandwidth for which the recommended VHT-MCS is intended, as defined in 9.28.3 (Link adaptation using the VHT variant HT Control field):For a VHT STA: Set to 0 for 20 MHzSet to 1 for 40 MHzSet to 2 for 80 MHzSet to 3 for 160 MHz and 80+80 MHz.For a TVHT STA:Set to 0 for TVHT\_WSet to 1 for TVHT\_2W and TVHT\_W+WSet to 2 for TVHT\_4W and TVHT\_2W+2WThe value 3 is reserved.For an S1G STA: Set to 0 for 1 MHzSet to 1 for 2 MHzSet to 2 for 4 MHzSet to 3 for 8 MHz.Set to 4 for 16 MHz.The values 5 to 7 are reserved. If the Unsolicited MFB subfield is 0, the BW subfield is reserved. |

8.7.3 Short frame fields

8.7.3.1 Frame Control field

***Change Table 8-301c as follows:***

|  |
| --- |
| * Ack Policy field in the FC field for Short frames
 |
|  Ack Policy field | Meaning |
| 0 | Normal Ack or Implicit Block Ack Request.In a short frame that is a non-A-MPDU frame or VHT single MPDU where the originator and addressed recipient do not both support FB:The addressed recipient returns an Ack frame after a short interframe space (SIFS) period, according to the procedures defined in 9.3.2.8 (ACK procedure). In a short frame that is part of an A-MPDU that is not a VHT single MPDU:The addressed recipient returns a BlockAck frame, either individually or as part of an A-MPDU starting a SIFS after the PPDU carrying the frame, according to the procedures defined in 9.3.2.9 (Block Ack procedure), 9.22.7.5 (Generation and transmission of BlockAck by an HT STA), and 9.22.8.3 (Operation of HT-delayed Block Ack). In a short frame that is a fragment:When both the originator and the addressed recipient support the Fragment BA procedure, the addressed recipient returns an NDP BlockAck frame after a SIFS period, according to the procedure defined in 9.3.2.9a (Fragment BA procedure).Ack Policy 0 shall be limited to at most one MU recipient per MU PPDU. |
| 1 | No Ack or Block Ack Policy.In a short frame that is a non-A-MPDU frame or VHT single MPDU:The addressed recipient takes no action upon receipt of the frame. More details are provided in 9.23 (No Acknowledgment (No Ack)). The Ack Policy subfield is set to this value in all individually addressed frames in which the sender does not require acknowledgment. The Ack Policy subfield is also set to this value in all group addressed frames. This combination is not used for short Data frames with a TID for which a Block Ack agreement exists. In a short frame that is part of an A-MPDU frame that is not a VHT single MPDU:The addressed recipient takes no action upon the receipt of the frame except for recording the state. The recipient can expect a BlockAckReq frame in the future to which it responds using the procedure described in 9.22 (Block Acknowledgment (Block Ack)). |

**9.3.2.9a Fragment BA procedure**

***Change the second paragraph of subclause 9.3.2.9a as follows:***

An S1G STA indicates support of Fragment BA using the Fragment BA Support subfield of the S1G Capabilities Info field in the S1G Capabilities element. An S1G STA shall set the Fragment BA Support

subfield to 1 in S1G Capabilities element if the dot11FragmentBAOptionImplemented is true. Otherwise,

the S1G STA shall set the Fragment BA Support subfield to 0. An S1G STA (known as the originator STA) with dot11FragmentBAOptionImplemented set to true sending frames to another S1G STA shall use the Fragment BA procedure described in this section if it has received from the STA (known as the recipient STA) a frame that included an S1G Capabilities element with the Fragment BA Support subfield set to 1. Otherwise an S1G STA shall not use the Fragment BA procedure described in this section. Non-S1G STAs shall not use the Fragment BA procedure described in this section.