IEEE P802.11
Wireless LANs

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| LB 200 comment resolutions for clause 9.48.4  |
| Date: 2014-03-05 |
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Abstract

This submission proposes comment resolutions of the CID1267,1546,1928,2767,2768,2769,2855, 2927.

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** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| 1267 | 209.4 | 9.48.4 | "To require that receiving STAs stop transmitting data frames to itself, a STA shall transmit at least one of thefollowing frames:"The scope should be explicitly narrowed.  | Insert, "This subclause describes flow control under relay operation for an S1G STA." | Revised-The flow control is an independent operation. It can be used not only under Relay operation but also other operation (eg.TWT) for an SIG STA.Move the subclause to an independent subclause and restrict the operation for an SIG STA.TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs from 1267 to 2927  |
| 1546 | 209.01 | 9.48.4 | 9.48.4 should be moved to 9.xx as it describes an independent procedure to Relay operation | Move the subclause to an independent subclause not under Relay operation | Accept- See discussion for CID 1267.TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs 1267 to 2927 |
| 1928 | 209.04 | 9.48.4 | "to itself" should be to "themselves," | Replace "to itself" with "to themsleves" | Revised- The sentence has been reworded for clarity.TGah editor to make changes shown in 11-14-308r2 under the heading for CID 1267 to 2927 |
| 2767 | 209.21 | 9.48.4 | Change "the receiving STAs" to "the intended recipient STA" | As commented | Revised-Add a definition of “a flow-controlling STA” and “a flow-controlled STA.”TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs 1267 to 2927 |
| 2768 | 209.48 | 9.48.4 | Insert " or the Duration field of the NDP ACK frame" after the text of "the Flow Resume action frame" | As commented | Revised-The suspend duration field in the cited sentence is replaced by suspend time which applies to all frames.TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs 1267 to 2927 |
| 2769 | 209.53 | 9.48.4 | Insert " or the Duration field of the NDP ACK frame" after the text of "the Flow Resume action frame" | As commented | Revised-The suspend duration field in the cited sentence is replaced by suspend time which applies to all frames.TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs 1267 to 2927 |
| 2855 | 209.26 | 9.48.4 | The suspend duration of a BAT/TACK/STACK frame with the Flow Control bit of the Frame Control field set to 1 has not been defined.Please clarify the STA's behavior after receiving the BAT/TACK/STACK frame with the Flow Control bit of the Frame Control field set to 1. | Define the supend duration value in a BAT/TACK/STACK frame with the Flow Control bit of the Frame Control field set to 1. | Revised-Defined the STA's behavior after receiving the BAT/TACK/STACK frame with the Flow Control bit of Frame Control field set to 1.Defined the suspend duration value in BAT/STAK frame .TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs 1267 to 2927 |
| 2927 | 209.03 | 9.48.4 | It is not clear if flow control mechanism mentioned in 9.48.4 is limited to Relay STA or not, because it doesn't mention anything about Relay. If it is limited to Relay operation, it should be mentioned there. If it is not limited to Relay operation, then whole subcluase should be moved to an appropriate subclause. | As mentioned in the Comment. | Accept-See discussion for CID 1267.TGah editor to make changes shown in 11-14-308r2 under the heading for CIDs 1267 to 2927 |

CIDs 1267,1546,1928,2767,2768,2769,2855, 2927

***TGah editor: Modify the sub-clause 9.48.4 as the following and move the sub-clause to the the sub-clause 9.56 (Page248, Line 40 ) :***

**9.56 Flow control**

***Change the following paragraph (Page 243, Lines 9-58) in the sub-clause 9.48.4 as follows:***

This subclause describes flow control operation for an S1G STA.

A STA may instruct a second STA to stop sending data frames using a flow-control instruction. The STA sending the flow-control instruction is called the flow-controlling STA. A STA that is the intended recipient of a flow-control instruction and that correctly receives that instruction is called a flow-controlled STA. A flow-controlled STA shall not transmit any data frames to the flow-controlling STA that transmitted the flow-control instruction, for the amount of time indicated in the flow-control instruction. A flow-control instruction is any of the following:

~~To require that receiving STAs stop transmitting data frames to itself, a STA shall transmit at least one of the following frames:~~

-a Flow Suspend action frame with a unicast or broadcast address in the RA field

-a BAT frame with the Flow Control bit in the Frame Control field set to 1

-a TACK frame with the Flow Control bit in the Frame Control field set to 1

-a STACK frame with the Flow Control bit in the Frame Control field set to 1

-an NDP ACK frame with the Relayed Frame field set to 1 and the Duration Indication field set to 1 and the

Duration field set to a nonzero value

Note - The transmission of BAT, STACK, TACK frames is only permitted within TWT SP as described in 9.41 (Target Wake Time (TWT)) and 9.22 (Block acknowledgement (Block ACK)) and 9.3.2.9 (Ack procedure).

The Suspend Duration field of the ~~above~~ Flow Suspend action frame listed above indicates the length of time during which a flow-controlled ~~receiving~~ STA~~s~~ ~~are~~ is not allowed to transmit Data frames to the flow-controlling STA identified by the TA field of the Flow Suspend action frame.

The Suspend Duration field of the TACK/BAT/STACK frame listed above indicates the length of time during which a flow-controlled TWT STA is not allowed to transmit Data frames to the flow-controlling STA identified by the TA field of the TACK/BAT frame and the RA field of the frame that elicited the STACK frame.

The Duration field of the NDP ACK frame listed above indicates the length of time during which a flow-controlled ~~receiving~~ STA~~s~~ ~~are~~ is not allowed to transmit Data frames to the flow-controlling STA identified by the RA field of the frame that elicited the NDP ACK frame.

~~A STA that receives any of the following frames shall not transmit any data frames to the STA that transmitted the frame, for the amount of time indicated in the Suspend Duration field of a Flow Suspend action frame or indicated in the Duration field of an NDP ACK frame:~~

~~-a Flow Suspend action frame with a BSSID that matches the BSSID of the BSS to which the intended recipient receiving STA is associated~~

~~-a BAT frame with the Flow Control bit of the Frame Control field set to 1~~

~~-a TACK frame with the Flow Control bit of the Frame Control field set to 1~~

~~-a STACK frame with the Flow Control bit of the Frame Control field set to 1.~~

~~-an NDP ACK frame with the Relayed Frame field set to 1 and the Duration Indication field set to 1 and the Duration field set to a nonzero value~~

A flow-controlled STA may resume transmission of data frames addressed to the flow-controlling STA that had previously suspended transmission after the expiration of the time indicated in the Suspend Duration field of a Flow Suspend, TACK, BAT, or STACK frame or in the Duration field of an NDP ACK frame.

A flow-controlling STA may send a Flow Resume action frame with a unicast or broadcast address in the RA field to cancel any outstanding flow s~~S~~uspend ~~Duration~~ time for the flow-controlling STA identified by the TA field of the Flow Resume action frame.

A flow-controlled STA that receives a Flow Resume action frame with a BSSID that matches the BSSID of the BSS of which the flow-controlled ~~receiving~~ STA is a member shall cancel any outstanding ~~remaining~~ flow s~~S~~ uspend ~~Duration~~ time, and may resume transmission of data frames to the flow-controlling STA identified by the TA field of the Flow Resume action frame.

A STA should send a next TWT value in the Next TWT/Suspend Duration field of the response frame it transmits to a TWT STA if the More Data bit is set to 0 in the eliciting frame. A STA may send a suspend time value in the Next TWT/Suspend Duration field of a response frame it transmits to a TWT STA if the More Data bit is set to 1 in the eliciting frame.

8.7.4.1 STACK frame format

***Modify the following figure (Page 165, Lines3) in the sub-clause 8.7.4.1:***



Figure 8-532e—STACK frame format

***Add the following paragraph (Page 165, Lines 34) in the sub-clause 8.7.4.1 as follows:***

If the Flow Control bit of the Frame Control field set to 1, the Tetrapartial Timestamp/Next TWT/Suspend Duration field contains the flow suspend duration, in microseconds, during which the intended recipient TWT STAs are not allowed to transmit data frames to the STA identified by the RA field of the frame that elicited the STACK frame.

**8.7.4.2 BAT frame format**

***Modify the following figure (Page 165, Lines43) in the sub-clause 8.7.4.2:***



Figure 8-532f—BAT frame format

***Add the following paragraph (Page 166, Lines 33) in the sub-clause 8.7.4.2 as follows:***

If the Flow Control bit of the Frame Control field set to 1, the Next TWT/Suspend Duration field contains the flow suspend duration, in micro-seconds, during which the intended recipient TWT STAs are not allowed to transmit data frames to the STA identified by the A2 field of the BAT frame.

8.6.26.2 Flow Suspend frame field

***Change the following paragraph (Page 157, Lines 8) in the sub-clause 8.6.26.2 as follows:***

The Suspend Duration field is 2 octet and denotes the amount of time, in micro-seconds, during which the ~~that~~ intended recipient ~~receiving~~ STAs are not allowed to transmit data frames to the STA identified by the TA field of the Flow Suspend frame.

8.6.26.3 Flow Resume frame field

***Change the following paragraph (Page 157, Lines 14~19) in the sub-clause 8.6.26.3 as follows:***

The Flow Resume frame is used by the STA identified by the TA field of the frame to cancel any outstanding flow suspend time the STA had previously invoked through the transmission of a Flow Suspend, BAT, TACK, STACK, or NDP ACK frame as described in 9.56 (Flow Control). The format of the Flow Resume frame Action field is shown in Table 8-363q (Flow Resume frame Action field format).

**8.3.1.21 TACK frame format**

***Change the following paragraph (Page 48, Lines 1~3) in the sub-clause 8.3.1.21 as follows:***



Figure 8-29m—TACK frame format

If the Next TWT Present field is set to 1 and the Flow Control bit set to 0 in the Frame Control field, ~~T~~the Next TWT/Suspend Duration field contains the value of the TSF timer corresponding to the next scheduled TWT SP for the STA that is the intended recipient of the frame. ~~The Next TWT field is optionally present if the Next TWT Present field is set to 1 in the FC field. Otherwise,the field is not present in the TACK frame.~~ If the Next TWT Present field is set to 1 and the Flow Control bit set to 1 in the Frame Control field, the Next TWT/Suspend Duration field contains the flow suspend duration in microseconds during which the intended recipient TWT STAs are not allowed to transmit data frames to the STA identified by the A2 field of the TACK frame. If the Next TWT Present field is set to 0 in the Frame Control field, the Next TWT/Suspend Duration field is not present in the TACK frame.

**10.2.2.1** General

***Add the following paragraph (Page 256, Lines 1) in the sub-clause 10.2.2.1 as follows:***

An S1G STA in PS mode shall set the More Data field to 1 in a frame transmitted to its AP when the STA intends to transmit another frame to the AP within this SP. An S1G STA in PS mode shall set the More Data field to 0 in a frame transmitted to its AP when the STA does not intend to transmit another frame to the AP within this SP.