IEEE P802.11
Wireless LANs

|  |
| --- |
| TGah D0.1 Comment Resolutions on MAC |
| Date: 2013-07-12 |
| Author(s): |
| Name | Affiliation | Address | Phone | Email |
| Bo Sun | ZTE Corporation | ZTE Building, No.9 Wuxingduan, Xifeng Rd., Xi’an, China | +86-29-687009411837 | Sun.bo1@zte.com.cn |
| Amin Jafarian | Qualcomm |  |  | jafarian@qti.qualcomm.com |

Abstract:  **MAC Comment Resolutions for Clauses 9.32n.3.3**

##### CIDs for Clause 24.1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 164 | Bo Sun | 9.32n.3.3 | 162.6 | Detailed Relay flow control mechanism has been accepted in spec framework. The corresponding text should be provided to the spec draft. | Add specified text for Relay flow control, in accordance with current spec framework. | **Revise**Modify the specification as proposed in this document |
| 986 | Zhongding Lei | 9.32n.3.3 | 162.6 | Signaling for flow control is TBD. | need to define signaling for relay suspension/resumption | **Revise**Modify the specification as proposed in this document |
| 844 | Simone Merlin |  | 56.56 | Flow control procedure can be useful also for non relays | Extend use an in comment. | **Revise**Modify the specification as proposed in this document |

**Discussion:** In May meeting, the Relay flow control mechanism has been proposed and accepted in the spec framework. And during the discussion, the group agreed not to limit the flow control action only for Relay implementation.

**Instruction to Editor: *Please add the following new subclause in TGah Draft D0.1.***

## 4.11a.3 Relay flow control

The Relay transfers frames received from non-AP STAs to the AP it is associated to either immediately or after some delay. Immediate transfers can take place at the discretion of the Relay, but can become delayed due to channel conditions or Relay buffer conditions. If previous transfers encounter failures, for example, then frames can fill the Relay’s buffers. To avoid a buffer overflow condition, a Relay/AP can use flow control signaling to request to non-AP STAs to stop sending frames to it until adequate buffer space is available.

**Instruction to Editor: *Please add the following content to Table 8-38 (Category values) in subclause 8.4.11 Action field.***

### 8.4.1.11 Action field

**Table 8-38—Category values**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Code | Meaning | See subclause | Robust | Group addressed privacy |
| <ANA> | Flow control | 8.5.23c | Yes | No |

**Instruction to Editor: *Please add the following new subclause in TGah Draft D0.1.***

### 8.4.1.46f Suspend Duration field

The format of the Suspend Duration field is shown in Figure 8-999a (Suspend Duration field format).

**Table 8-999a—Suspend Duration field format**

|  |  |
| --- | --- |
|  | Suspend Duration Time |
| Octets: | 2 |

The Suspend Duration Time field contains a 16-bit unsigned integer that specifies the amount of time in usec that a recipient STA waits before it is permitted to transmit a frame to the STA that transmitted the Suspend Duration Time field.

**Instruction to Editor: *Please insert below new subclause 8.5.23c into TGah Draft D0.1.***

## 8.5.23c Flow Control Action frame details

### 8.5.23c.1 Flow Control Action field

The Flow Control Action field values are specified in Table 8-295ax (Flow Control Action field values).

**Table 8-295ax—Flow Control Action field values**

|  |  |
| --- | --- |
| Flow Control Action field value | Description |
| 0 | Flow Suspend |
| 1 | Flow Resume |
| 2-255 | Reserved |

### 8.5.23c.2 Flow Suspend frame format

The Flow Suspend frame is used by an AP to suspend incoming transmissions for an amount of time indicated in the Suspend Duration field. The format of the Flow Suspend frame Action field is shown in Table 8-295ax (Flow Suspend frame Action field format).

**Table 8-295ay—Flow Suspend frame Action field format**

|  |  |
| --- | --- |
| Order | Information |
| 1 | Category |
| 2 | Flow Control Action |
| 3 | Suspend Duration |

The Category field is 1 octet and is set to the value in Table 8-38 (Category values) for category Flow Control Action.

The Flow Control Action field is set to the value in Table 8-295ax (Flow Control Action field values) representing Flow Suspend.

The Suspend Duration field denotes the amount of time that STAs shall not transmit data frames to the STA addressed in the TA.

### 8.5.23c.3 Flow Resume frame format

The Flow Resume frame is used by an AP to cancel any existing flow suspend time, and resume normal procedure for data frame transmissions to the STA addressed in the TA. The format of the Flow Resume frame Action field is shown in Table 8-295ax (Flow Resume frame Action field format).

**Table 8-295az— Flow Suspend frame Action field format**

|  |  |
| --- | --- |
| Order | Information |
| 1 | Category |
| 2 | Flow Control Action |

The Category field is 1 octet and is set to the value in Table 8-38 (Category values) for category Flow Control Action.

Th Flow Control Action field is set to the value in Table 8-295ax (Flow Control Action field values) representing Flow Resume.

**Instruction to Editor: *Please make the following changes in subclause 9.32n.3.3 of TGah Draft D0.1.***

### 9.32n.3.3 Flow control

~~A Relay STA may serve as a relay to more than one non-AP STAs at any one time. Depending on channel conditions, a relay STA might not be able to access the channel due to medium busy condition and/or frames that are transmitted unsuccessfully.~~

~~As a result, frames can become buffered at the relay STA. To avoid a buffer overflow condition, a relay STA may signal to non-AP STAs to stop sending frames addressed to the relay STA until adequate space exists in its buffer to accept additional frames.~~

~~Signaling for flow control is TBD.~~

An AP may send a Flow Suspend action frame with a unicast or broadcast address in the RA field, a BAT frame or a TACK frame or an STACK frame with the Flow Control bit in the Frame Control field set to 1 to request STAs that receive the frame to stop transmitting any data frames to the AP. The Suspend Duration field indicates the length of time STAs are not permitted to transmit Data frames to the STA addressed in the TA field.

A STA that receives a Flow Suspend action frame with a matching BSSID, a BAT frame or a TACK frame or an STACK frame with the Flow Control bit of the Frame Control field set to 1 shall not transmit any data frames to the AP for the amount of time indicated in the Suspend Duration field.

A STA may resume regular channel access procedure to transmit data frames addressed to the AP after the expiration of the time indicated in the Suspend Duration field.

An AP may send a Flow Resume action frame with a unicast or broadcast address in the RA field to cancel outstanding Suspend Duration time for the STA addressed in the TA field of the Flow Resume action frame.

A STA that receives a Flow Resume action frame with a matching BSSID shall cancel any remaining Suspend Duration time, and may resume regular channel access to transmit data frames to the AP which address matches the address in the TA field of the Flow Resume action frame.