IEEE P802.11
Wireless LANs

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| Correct name and operation of the SIFS response bit  |
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Abstract

This document provides a simple definition of the SIFS response bit and its operation.

This document is provided as part of resolution to CID 3037.

**Problem statement**

The SIFS response bit defined by the current text requires (mandates) a PPDU transmitter to set the bit to 1 if the PPDU will be followed by a response packet in SIFS time. The motivation is to assist receivers with turnaround by giving them aan advanced warning in PHY header that a switch from receive to transmit will be imminent (as opposed to coming to the same conclusionat MAC layer after decoding the received frame).

There is obviously a layering violation where PHY header is being required to carry a piece of information that needs to be scoped using a MAC address, i.e., a DBand STA receiving a PPDU with SIFS response = 1 cannot simply start its transmit path in preparation for a turnaround without decoding the RA address field and ensuring tha the STA is the PPDU target in the first place. We accept that a receiver in need of such look ahead wil take extra effort to decode the MAC address, and receivers not needing any assistance can simply ignore the bit on receive.

There are cases where the bit transmitter cannot simply tell if a SIFS response will be involved. The simplest example is the sender of an Ack frame, which canno tell if the other end (which is sending data frames) has more data or not.

Finally, the scenarios where transmitter can predict a SIFS response, when put together, form a long and complex list that –all– transmitters are forced to implement to satisfy slow receivers. A partil list would be data frames with Normal or Block Ack policy, request-response frames during AT, management frames needing an Ack, and more. Forcing a transmitter to manage numerous combinations of type/subtypes and other network information under the umbrella of a SIFS response is burdening transmitter MACs.

We simplify the bit definition to reduce the imposed transmitter complexity.

##### 9.3.2.4.3 SIFS

A transmitting DBand STA shall set the TXVECTOR parameter SIFS response to one if the DBand STA is transmitting a packet during an SP/TXOP, the DBand STA is the owner of the SP/TXOP, and the DBand STA is transmitting a packet that requires an immediate response following a SIFS period. The SIFS response parameter is set to zero in all other cases.

**Table 73 TXVECTOR and RXVECTOR parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| SIFS response  | A transmitting DBand STA shall set the TXVECTOR parameter SIFS response to one if the DBand STA is transmitting a packet during an SP/TXOP, the DBand STA is the owner of the SP/TXOP, and the DBand STA is transmitting a packet that requires an immediate response following a SIFS period. The SIFS response parameter is set to zero in all other cases. | Y | Y |

Table 82 Control PHY header fields

| **Field Name** | **Number of bits** | **Starting bit** | **Description** |
| --- | --- | --- | --- |
| SIFS response  | 1  | 21 | Defined in Table 73. |

Table 84 Header fields

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Number of bits** | **Start Bit** | **Description** |
| SIFS response  | 1  | 45 | Defined in Table 73. |

Table 88 Header fields

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Number of Bits** | **Start Bit** | **Description** |
| SIFS response  | 1  | 43 | Defined in Table 73. |