IEEE P802.11
Wireless LANs

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| Segmented MSDU size negotiation  |
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Abstract

Proposal of the segmented MSDU size negotiation

Discussion:

As defined in the draft IEEE P802.11ay/D5.0, October 2019

“The MSDU Buffer Size field indicates the number of buffers available for this particular TID. Each buffer is capable of holding the number of octets equal to the maximum supported MSDU size as indicated in the Segmentation and Reassembly Capability field of the STA’s EDMG Capabilities element.”

The maximum supported MSDU size is delivered in the STA capabilities. The existing solution does not allow to change the maximum segmented MSDU size once associated. Thus, the value cannot be adjusted to the MTU size and cannot be adapted per TID. The existent text does not allow negotiation of the supported segmented MSDU size and requires supporting of the maximum segmented MSDU size advertised in the capabilities that may result in excessive memory allocation and low utilization of it.

The proposal is to remove the Maximum Segmented MSDU Exponent field from the capabilities and add it to the SAR Configuration element thus allowing negotiation of the size per SAR agreement.

***TGay editor implement the changes as presented below***

**9.4.2.127.8 SAR Capability Information field**

P120 Figure 9-554c

***Remove the field “Maximum Segmented MSDU Exponent” and make the bits reserved***

*P121* Table 9-254a

***Remove the table and add the following text:***

The Segmentation and Reassembly Support subfiled indicates whether the STA supports the segmentation and reassembly mechanism as specified in 10.69. A value of 0 indicates that segmentation and reassembly is not supported, set by dot11SAROptionImplemented equal to false. A value of 1 indicates that segmentation and reassembly is supported, set by dot11SAROptionImplemented equal to true.

**9.4.2.278 SAR Configuration element**

*P171 Figure 9-787cc*

***Append new field at the end of the figure***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Element ID  | Length  | Element ID Extension  | SAR Parameters  | MSDU Buffer Size  | MPDU Buffer Size  | Maximum Segmented MSDU Exponent  |
| Octets | 1 | 1 | 1 | 1 | 2 | 2 | 1 |

P171L18

The MSDU Buffer Size field indicates the number of buffers available for this particular TID. Each buffer is capable of holding the number of octets equal to the value indicated in the subfiled Maximum Segmented MSDU Exponent.

***Append at end of the subclause***

|  |  |  |
| --- | --- | --- |
|  | B0 B3 | B4 B7 |
|  | Maximum Segmented MSDU Exponent | Reserved |
| Bits | 4 | 4 |

**Figure 9-787ce – Maximum Segmented MSDU Exponent**

The Maximum Segmented MSDU Exponent subfield specifies the maximum size of the segmented MSDU belonging to the TID under the BA agreement. This subfield is an integer in the range 0 to 9. The maximum segmented MSDU size that is defined by this subfield is equal to: 2 (13 + Maximum Segmented MSDU Exponent) – 1 (octets).

**10.25.2 Setup and modification of the block ack parameters**

P230L6

***Replace “DMG Capabilities element” by “SAR Configuration element”***

**10.69.1 General**

P357L26

The recipient STA is responsible to reassemble the segmented MSDUs and forward it to the MAC SAP. This mechanism allows sending a large MSDU over the wireless link without the need for any upper layer fragmentation or segmentation processing. The maximum segmented MSDU size is negotiated between communicating peers during SAR establishment, see 10.25.2 (Setup and modification of the block ack parameters).

P237L38

***Append inline 38***

The originator shall not transfer segmented MSDU if the size of the segmented MSDU is greater than indicated in the Maximum Segmented MSDU Exponent subfield of the recipient’s SAR configuration element.