IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| Max Number Of MSDU in A-MSDU | | | | |
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Abstract

Resolve CID7153 to provide capability of maximal number of MSDU in A-MSDU

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| **CID** | **Page** | **Clause** | **Duplicate of CID** | **Resn Status** | **Comment** | **Proposed Change** |
| 7153 | 1010.44 | 9.4.2.128.1 |  |  | Negotiation of Max Number Of MSDUs In AMSDU as part of STA capabilities makes a lot of sense to DMG STA. In the current definition the Max Number Of MSDUs In AMSDU capability is not applicable for DMG STA's | Extend DMG Capabilities element to convey DMG Max Number Of MSDUs In AMSDU capability subfield with four values encoded 32, 16, 8, and 4 |

Discussion:

Support of A-MSDU on the receiver side requires additional processing to release MSDU to upper layer in relation to processing of MPDU. The additional processing increases with number of MSDU’s aggregated in A-MSDU. If number of the MSDU in one A-MSDU rises over threshold that depends on the receiver processing capabilities then delivery of MSDU’s to higher layer may be substantially delayed or in worst case the MSDU’s may be even dropped. The maximum number of MSDU in A-MSDU indication of receiver capabilities, which is already defined for HT and VHT STAs, allows to prevent the mentioned issues. However, such capability does not exist for a DMG STA. There are two types of A-MSDU supported in DMG networks - basic A-MSDU and short A-MSDU.

To address this issue, propose to add a two subfields named Maximim Number Of MSDUs In Basic AMSDU and Maximum Number Of MSDUs InShort AMSDU to DMG Capabilities element.

**Editor,** append new fields Maximum Number Of MSDUs InBasic AMSDU and Maximum Number Of MSDUs In Short AMSDU to DMG Capabilities element format in Figure 9-502 – DMG Capabilities element format

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Element ID | Length | STA Address | AID | DMG STA Capability Information | DMG AP or PCP Capability Information | DMG STA BeamTrackingTimeLimit | Maximum Number Of Basic MSDUs In AMSDU | Maximum Number Of Short MSDUs In AMSDU |
| Octets | 1 | 1 | 6 | 1 | 8 | 2 | 2 | 1 | 1 |

Figure 9-502 – DMG Capabilities element format

**Editor,** in P1016L21 add sub clause

**9.4.2.128.x Maximum Number of MSDUs in A-MSDU**

The Maximum Number Of MSDUs In Basic AMSDU field is defined in Figure 9-xyy (DMG STA Maximum Number Of Basic MSDUs In AMSDU subfield) and indicates the maximum number of MSDUs in an Basic A-MSDU that the DMG STA is able to receive from another DMG STA.

|  |  |
| --- | --- |
| **Value** | **Meaning** |
| 0 | No limit on the maximum number of A-MSDUs supported |
| 1 | A maximum of 32 MSDUs are supported |
| 2 | A maximum of 16 MSDUs are supported |
| 3 | A maximum of 8 MSDUs are supported |
| 4 | A maximum of 4 MSDUs are supported |
| 5-255 | Reserved |

**Figure 9-xyy Maximum Number Of MSDUs In Basic A-MSDU field**

The Maximum Number Of MSDUs In Short AMSDU field is defined in Figure 9-xyz (DMG STA Maximum Number Of Short MSDUs In AMSDU subfield) and indicates the maximum number of MSDUs in an Short A-MSDU that the DMG STA is able to receive from another DMG STA.

|  |  |
| --- | --- |
| **Value** | **Meaning** |
| 0 | No limit on the maximum number of A-MSDUs supported |
| 1 | A maximum of 1024 MSDUs are supported |
| 2 | A maximum of 512 MSDUs are supported |
| 3 | A maximum of 256 MSDUs are supported |
| 4 | A maximum of 128 MSDUs are supported |
| 5 | A maximum of 64 MSDUs are supported |
| 6 | A maximum of 32 MSDUs are supported |
| 7-255 | Reserved |

**Figure 9-xyz Maximum Number Of MSDUs In Short A-MSDU field**

**Editor,** in sub clause 10.12 at P1336L57 add paragraph:

A DMG STA shall not transmit a Basic A-MSDU that includes a number of MSDUs greater than the value indicated by the Maximum Number Of MSDUs In Basic AMSDU field in any DMG Capabilities element sent by the recipient DMG STA.

A DMG STA shall not transmit a Short A-MSDU that includes a number of MSDUs greater than the value indicated by the Maximum Number Of MSDUs In Short AMSDU field in any DMG Capabilities element sent by the recipient DMG STA.

A DMG STA that sets A-MSDU subframe structure subfield to 1 in a DMG Attributes field of TSPEC element (9.4.2.30) to indicate Short A-MSDU subframe support shall be capable of receiving at least 32 MSDU’s in short A-MSDU

**References:**

1. IEEE P802.11-REVmc/D5.0, Jan 2016