IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| EDMG Capability and Operation Element Channel Indication | | | | |
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Abstract

*Instruct editor to update the section of 3.1.1.250 as highlighted:*

* + - 1. **EDMG Operation Elements**

**General**

The EDMG Operation elements is defined as

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Element ID | Length | Element ID  Extension | Primary  Channel | BSS  AID | A-BFT  Parameters | BSS Operating  Channels | Operating Channel Width |
| Octets: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**—EDMG Operation element format**

The BSS Operating Channels field is defined as following:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 |  |  |  |  | B5 |  | B7 |
|  | Ch1 | Ch2 | Ch3 | CH4 | CH5 | CH6 | Reserved | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**—BSS Operation Channels field format**

The BSS Operating Channels field is a bitmap that indicates the 2.16 GHz channel(s) operated by the STA, where B0 corresponds to Channel 1, B1 corresponds to Channel 2 and so on (Channel number corresponds to the defined Channelization). If a bit is set to 1, it indicates that the STA operates on the corresponding channel; otherwise if the bit is set to 0, the STA does not operate on the corresponding channel.

The Operating Channel Width field is 1-octet long and defined as following:

|  |  |  |
| --- | --- | --- |
|  | B0 B3 | B4B7 |
|  | Operating Channel  Width | Reserved |
| Bits: | 4 | 4 |

**—The Operating Channel Width field format**

The Operating Channel Width field is encoded to indicate the operating channel(s) by the STA, in which B0 to B3 are defined to indicate the Operating Channel Width with support of the EDMG channel bonding and carrier aggregation. B4 to B7 are reserved. The definition of B0 to B3 is encoded in the following table:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Operating Channel Width field | | Supported single channel, channel bonding and channel aggregation operations | | | | | |
| B0 B1 | B2 B3 | Single Channel/Channel Bonding | | | | Channel Aggregation | |
|  |  | 2.16 GHz  (primary channel) | 4.32 GHz | 6.48 GHz | 8.64 GHz | 2.16+2.16 GHz | 4.32 + 4.32 GHz |
| 00 | reserved |  |  |  |  |  |  |
| 01  (operating on single channel / channel bonding only) | 00 | 1 | - | - | - | - | - |
| 01 | 1 | 1 | - | - | - | - |
| 10 | 1 | 1 | 1 | - | - | - |
| 11 | 1 | 1 | 1 | 1 | - | - |
| 10  (operating on both single channel / channel bonding and channel aggregation)  (2.16+2,16GHz) | 00 | 1 | - | - | - | 1 | - |
| 01 | 1 | 1 | - | - | 1 | - |
| 10 | 1 | 1 | 1 | - | 1 | - |
| 11 | 1 | 1 | 1 | 1 | 1 | - |
| 11  (operating both single channel / channel bonding and channel aggregation  (4.32+4.32GHz) | 00 | 1 | - | - | - | 1 | 1 |
| 01 | 1 | 1 | - | - | 1 | 1 |
| 10 | 1 | 1 | 1 | - | 1 | 1 |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 |

Note: “1” denotes the operating channel width, “-“denotes the non-operating channel width.

9.4.1 Fields that are not elements

*Added the following 2 subsections at the end of this section.*

**9.4.1.58 EDMG Channels Information field**

The EDMG Channels Information field is defined in Figure 1.

When this field is transmitted in the EDMG Capabilities element, the Number of EDMG Channels subfield defines the integer number, N, of channels that are supported by an EDMG STA, and each subsequent EDMG Channel *i* subfield (1 ≤ *i* ≤ N) includes the channel number of a channel that is supported by the EDMG STA, as defined in Annex E.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Number of EDMG Channels | EDMG Channel 1 | … | EDMG Channel N |
| Octets: | 1 | 1 |  | 1 |

1. —EDMG Supported Channels Information field

**9.4.1.59 EDMG Aggregated Channels Information field**

The EDMG Aggregated Channels Information field is defined in Figure 2.

When this field is transmitted in the EDMG Capabilities element, the Number of Channel Aggregation Combinations subfield defines the integer number, M, of channel aggregation combinations that are supported by an EDMG STA.

The Channel Aggregation Combination *i* subfield (1 ≤ *i* ≤ M) is defined in Figure 3. The channel numbers, as defined in Annex E, of the channels that are aggregated for each channel aggregation combination are included in the Aggregated Channel 1 subfield and Aggregated Channel 2 subfield, respectively.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Number of Channel Aggregation Combinations | Channel Aggregation Combination 1 | … | Channel Aggregation Combination M |
| Octets: | 1 | 2 |  | 2 |

1. —EDMG Aggregated Channels Information field

|  |  |  |
| --- | --- | --- |
|  | Aggregated Channel 1 | Aggregated Channel 2 |
| Octets: | 1 | 1 |

1. —Channel Aggregation Combination subfield

9.4.250 EDMG Capabilities Element

9.4.250.1 General

*Delete B0-B7 Supported Channels Bitmap in Figure 17 Core Capabilities field format.*

*Delete the paragraph immediately after Figure 17.*

*Change the Table in the last paragraph of this subsection as follows.*

1. —Capabilities IDs

|  |  |
| --- | --- |
| Capability | Capabilities ID |
| Beamforming | 0 |
| Multi-BF | 1 |
| Antenna Polarization Capability | 2 |
| PHY Capability | 3 |
| Supported EDMG Channels | 4 |

*Insert the following subsection at the end of the section.*

**9.4.250.6 Supported EDMG Channels**

The Supported EDMG Channels field is defined in Figure 4, where N is the number of supported EDMG channels, and M is the number of supported channel aggregation combinations. If both N and M are equal to 0, the Supported EDMG Channels field should not be included in the Extended Capabilities of the EDMG Capabilities element.

|  |  |  |
| --- | --- | --- |
|  | EDMG Channels Information | EDMG Aggregated Channels Information |
| Octets: | N+1 | 2M+1 |

1. —Supported EDMG Channels

The EDMG Channels Information field is defined in 9.4.1.58.

The EDMG Aggregated Channels Information field is defined in 9.4.1.59.

**9.4.2.53 Extended Channel Switch Announcement element**

*Change the 5th paragraph as follows.*

If transmitted by a non-EDMG STA, t~~T~~he New Channel Number field is set to the number of the channel after the channel switch. The channel number is a channel from the STA’s new operating class as defined in Annex E. If transmitted by an EDMG STA, the New Channel Number field is set to the channel number of the primary channel after the channel switch. The channel number is a channel from the STA’s new operating class as defined in Annex E.

**11.9.8 Selecting and advertising a new channel**

*Insert 11.9.8.7 at the end of this section.*

**11.9.8.7 Selecting and advertising new channels in an EDMG BSS**

The decision to switch to new operating channels in an EDMG BSS shall be made only by an AP or PCP. An AP or PCP may make use of the information it received in EDMG Capabilities elements and the results of measurements undertaken by the AP or PCP and other STAs in the BSS to assist the selection of the new operating channels. The algorithm to choose the new operating channels is beyond the scope of this standard.

An AP or PCP shall inform associated STAs that the AP or PCP is changing to a new primary channel and shall maintain the association by advertising the switch using the Extended Channel Switch Announcement element in its transmitted DMG Beacon frames, Announce frames, or Information Response frames until the intended channel switch time. The channel switch should be scheduled so that all non-AP and non-PCP STAs in the BSS, including STAs in power save mode, have the opportunity to receive at least one Extended Channel Switch Announcement element before the switch. A STA may ignore the Channel Switch Mode field and either cease transmissions or attempt new transmission in the operating channel until the channel change occurs. The AP or PCP shall advertise the EDMG Operation element with the new BSS operating channels after switching to a new primary channel.

A STA that receives an Extended Channel Switch Announcement element may or may not choose to perform the specified switch. If a STA that receives an Extended Channel Switch Announcement element chooses to perform the specified switch, it shall not operate on any channel other than the new primary channel until it receives the operating channels in the EDMG Operation element from the associated AP or PCP. If a STA that receives an Extended Channel Switch announcement element chooses not to perform the specified switch, it may take alternative action. For example, it may choose to move to a different BSS. A non-AP and non-PCP STA in an infrastructure BSS or PBSS shall not transmit the Extended Channel Switch Announcement element.