IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| Draft Text for Channel Allocation for SP | | | | |
| Date: 2017-3-13 | | | | |
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|  |  |  |  |  |

Abstract

This document proposes specification text for signalling related to SP allocation for the 11ay D0.1.

30.2.2 TXVECTOR and RXVECTOR parameters

***Insert “GRANT” value for the CT\_TYPE parameter in the Table 6 —TXVECTOR and RXVECTOR on page 83:***

Table 6 —TXVECTOR and RXVECTOR parameters

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Parameter** |  | **Condition** |  | **Value** | **TXVECTOR** | **RXVECTOR** |
| TRN\_RX\_PATTERN | FORMAT is EDMG | | Indicates the receive antenna pattern to be used when  measuring TRN-Units present in a received PPDU.  Enumerated type:  Quasi-omni: Indicates that quasi-omni AWV should be used  Directional: Indicates that directed AWV should be used.  The parameter is valid only when the PACKET-TYPE is  TRN-T-PACKET and EDMG\_TRN\_LEN is greater than  0. | | Y | Y |
| EDMG\_BEAM\_TRACKING\_REQUEST | FORMAT is EDMG | | This parameter indicates whether beam tracking is  requested.  Enumerated type:  Beam Tracking Requested or Beam Tracking Not  Requested | | Y | Y |
|  | FORMAT is NON\_EDMG  Otherwise | | Indicates whether the control trailer is present in the  PPDU: Enumerated type:  Present  Not Present  Not present | | Y  N | Y  N |
| CON |  |  |  |  |  |  |
| CT\_TYPE |  |  | Indicates the content of the control trailer:  Enumerated type: CTS\_DTS GRANT\_RTS\_CTS2self SPR  GRANT | | Y | Y |
| CH\_BANDWIDTH | FORMAT is EDMG | | In the TXVECTOR, indicates the channel width of the  transmitted PPDU. In the RXVECTOR, indicates the channel width of the received PPDU.  Enumerated type:  CBW216 for 2.16 GHz  CBW432 for 4.32 GHz  CBW648 for 6.48 GHz CBW864 for 8.64 GHz CBW216+216 for 2.16+2.16 GHz CBW432+432 for 4.32+4.32 GHz | | Y | Y |

29.3.8 Control trailer

***Change the third paragraph as follows:***

The format of the control trailer depends on the value of the TXVECTOR parameter CT\_TYPE. Table 28 defines the control trailer format when the CT\_TYPE parameter is equal to CTS\_DTS. Table 29 defines the control trailer format when the CT\_TYPE parameter is equal to GRANT\_RTS\_CTS2self. Table 30 defines the control trailer format when the CT\_TYPE parameter is equal to GRANT.

***Change Table 28-30 as follows. (Move all the CTCS fields to the end of the control trailer for table 26 – 27)***

**Table 28 —Control trailer definition when CT\_TYPE is CTS\_DTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Number of bits** | **Start bit** | **Description** |
| Channel  Aggregation | 1 | 0 | See Table 13 |
| BW | 8 | 1 | See Table 13 |
| Primary Channel  Number | 3 | 9 | See Table 13 |
| SISO/MIMO | 1 | 12 | Set to 0 to indicate that the following transmission from this STA is performed in SISO. Set to 1 to indicate that the following transmission from this STA is performed in MIMO. |
| SU/MU MIMO | 1 | 13 | Set to 0 to indicate SU-MIMO, and set to 1 to indicate MU-MIMO. Reserved when SISO/MIMO is set to 0. |
|  |  |  |  |
| Reserved | 113 | 14 | Set to 0 by the transmitter and ignored by the receiver. |
| CTCS | 16 | 127 | Contains the CRC-16 computed over the content of the control trailer. This field is computed as defined in section 20.3.7 |

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|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Number of bits** | **Start bit** | **Description** |
| Channel  Aggregation | 1 | 0 | See Table 13 |
| BW | 8 | 1 | See Table 13 |
| Primary Channel  Number | 3 | 9 | See Table 13 |
| SISO/MIMO | 1 | 12 | Set to 0 to indicate that the following transmission from this STA is  performed in SISO. Set to 1 to indicate that the following transmission from this STA is performed in MIMO. |
| SU/MU MIMO | 1 | 13 | Set to 0 to indicate SU-MIMO, and set to 1 to indicate MU-MIMO.  Reserved when SISO/MIMO is set to 0. |
| Number of SS | 3 | 14 | The value of this field plus one indicates the number of SSs transmitted  to the EDMG STA that is the recipient of the control trailer. Reserved if  SISO/MIMO is set to 0. |
| TX Sector ID for  SS1 | 6 | 17 | This field indicates the sector that the transmitter of this control trailer  uses for SS1. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS1 | 2 | 23 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS1. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS1 | 2 | 25 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS1. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS2 | 6 | 27 | This field indicates the sector that the transmitter of this control trailer  uses for SS2. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS2 | 2 | 33 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS2. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS2 | 2 | 35 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS2. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS3 | 6 | 37 | This field indicates the sector that the transmitter of this control trailer  uses for SS3. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS3 | 2 | 43 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS3. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS3 | 2 | 45 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS3. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS4 | 6 | 47 | This field indicates the sector that the transmitter of this control trailer  uses for SS4. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS4 | 2 | 53 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS4. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS4 | 2 | 55 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS4. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS5 | 6 | 57 | This field indicates the sector that the transmitter of this control trailer  uses for SS5. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS5 | 2 | 63 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS5. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS5 | 2 | 65 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS5. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS6 | 6 | 67 | This field indicates the sector that the recipient of this control trailer uses  for SS6. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS6 | 2 | 73 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS6. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS6 | 2 | 75 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS6. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS7 | 6 | 77 | This field indicates the sector that the transmitter of this control trailer  uses for SS7. Reserved if SISO/MIMO is set to 0. |
| TX DMG antenna  ID for SS7 | 2 | 83 | This field indicates the DMG antenna that the transmitter of this control  trailer uses for SS7. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS7 | 2 | 85 | This field indicates the DMG antenna that the recipient of this control  trailer uses for SS7. Reserved if SISO/MIMO is set to 0. |
| TX Sector ID for  SS8 | 6 | 87 | This field indicates the sector that the recipient of this control trailer uses  for SS8. Reserved if SISO/MIMO is set to 0. |

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| --- | --- | --- | --- |
| TX DMG antenna  ID for SS8 | 2 | 93 | This field indicates the DMG antenna that the transmitter of this control trailer uses for SS8. Reserved if SISO/MIMO is set to 0. |
| RX DMG antenna  ID for SS8 | 2 | 95 | This field indicates the DMG antenna that the recipient of this control trailer uses for SS8. Reserved if SISO/MIMO is set to 0. |
|  |  |  |  |
| Reserved | 30 | 97 | Set to 0 by the transmitter and ignored by the receiver. |
| CTCS | 16 | 127 | Contains the CRC-16 computed over the content of the control trailer. This field is computed as defined in section 20.3.7 |

**Table 30 —Control trailer definition when CT\_TYPE is SPR**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Number of bits** | **Start bit** | **Description** |
| Channel  Aggregation | 1 | 0 | See Table 13 |
| BW | 8 | 1 | If the IsChannelNumber field is set to 1, the BW field indicates the requested channel number for the allocation using the bitmap format of the BW field defined in Table 13.  If the IsChannelNumber field is set to 0, the BW field indicates a channel width. In this case, the channel width can be allocated on any channel number. |
| Primary Channel  Number | 3 | 9 | See Table 13 |
| IsChannelNumber | 1 | 12 | Indicates whether the STA requests a designed channel or not. |
| Reserved | 114 | 13 | Set to 0 by the transmitter and ignored by the receiver. |
| CTCS | 16 | 127 | Contains the CRC-16 computed over the content of the control trailer. This field is computed as defined in section 20.3.7 |

***Insert the following tables at the end of the subclause,after the Table 30***

Table 31 —Control trailer definition when CT\_TYPE is GRANT

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Number of bits** | **Start bit** | **Description** |
| Channel Aggregation | 1 | 0 | See Table 13. This field specifies the channel(s) over which the allocation is scheduled on. |
| BW | 8 | 1 | See Table 13. This field specifies the channel(s) over which the allocation is scheduled on. |
| Primary Channel Number | 3 | 9 | See Table 13 |
| Reserved | 115 | 12 | Set to 0 by the transmitter and ignored by the receiver. |
| CTCS | 16 | 127 | Contains the CRC-16 computed over the content of the control trailer. This field is computed as defined in section 20.3.7 |

9.4.2.134 DMG TSPEC element

***Change Figure 9-521 as follows***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Eelement  ID | Length | DMG  Allocation Info | BF  Control | Allocation  Period | Minimum  Allocation | Maximum  Allocation |
| Octets: | 1 | 1 | 1 | 4 | 2 | 2 | 2 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Minimum Duration | Number of Constraints | Traffic Scheduling Constraint Set | BW Control | BW |
| Octets: | 2 | 1 | Variable | 1 | 1 |

Figure 9-521 - DMG TSPEC element format

***Insert the following paragraphs at the end of the subclause***

The BW Control field is defined in Figure 9-521a.

|  |  |  |  |
| --- | --- | --- | --- |
|  | B0 | B1 | B2 B7 |
|  | IsChannelNumber | Aggregation | Reserved |
| Bits: | 1 | 1 | 6 |

Figure 9-521a BW Control field format

The IsChannelNumber and Aggregation subfields are defined in Table 27. When transmitted in an ADDTSResponse frame, the IsChannelNumber is reserved.

The BW field is defined in Table 30 —Control trailer definition when CT\_TYPE is SPR.

11.4.13 DMG allocation formats

***Insert the following paragraphs in this subclause***

An EDMG STA may request SP allocation(s) using the BW, Channel Aggregation and IsChannelNumber subfields in a SPR frame or a DMG ADDTS Request frame. If a SPR frame or a DMG ADDTS Request frame is received, the EDMG AP or EDMG PCP sets the values of BW and Channel Aggregation subfields in the control trailer of the Grant frame or the DMG TSPEC element of the DMG ADDTS Response frame, respectively, to allocate SP(s) over channel(s) as follows,

* If the IsChannelNumber subfield is equal to 0, the AP or PCP may allocate a channel with channel width less than or equal to the value of the BW subfield.
* If the IsChannelNumber subfield is equal to 1, the AP or PCP should allocate the channel as indicated by the BW subfield.

**References:**

1. 17/0433r0- Channel Allocation for SP
2. Draft P802.11ay\_D0.1