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| Project | IEEE 802.16 Broadband Wireless Access Working Group |
| Title | DL and UL Access Zone Allocation for Semi-Distributed RS |
| Date: | 2007-09-07 |
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| Re: | This document is in response to IEEE 802.16 Working Group Letter Ballot #28, as specified in IEEE 802.16-07/043. This document proposes text regarding signaling to enable DL and UL access zone allocation for insertion into IEEE P802.16j/D1. |
| Abstract | This contribution proposes text regarding signaling to enable DL and UL access zone allocation for semi-distributed RS. |
| Purpose | Text is included for insertion in the IEEE 802.16j amendment to the standard. |
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DL and UL Access Zone Allocation for Semi-Distributed RS

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Introduction

In Section 6.3.2.1.2.2.2.6 of IEEE P802.16j/D1, an RS UL size request header is specified by which a distributed RS may request a region of the UL access zone of a certain size under its control. However, in IEEE P802.16j/D1, no means of allocating such a region to a distributed RS is specified. In this contribution, it is proposed to include this allocation in the RS configuration description message (RS-CD) specified in Section 6.3.2.3.73 of the document. Also, means of allocating a region of the DL access zone to a distributed RS is also proposed.

Proposed text changes

Modify subclause 6.3.2.3.73 as follows:

This message may be used by MR-BS to broadcast RS operation configurations to all associated RSs or used by MR-BS or RS to multicast configuration to its child RSs. This message can also be unicast to a RS during initial network entry to inform the configuration parameter to this RS. [To enable distributed scheduling, this message also contains DL and UL access zone allocations. The RS UL size request header \(Section 6.3.2.1.2.2.2.6\) may be used to request an access zone of a certain size.](#)

Modify Table 183n in Section 6.3.2.3.7.3 as follow:

| Syntax | Size | Notes |
|---|--------|---|
| RS-CD_Message_Format{ } | | |
| Management Message Type = 79 | 8 bits | |
| Configuration_para_type | 8 bits | b0 = 1, Frame structure configuration is included b1 = 1, R-amble transmission/monitoring parameters are included b2 =1, DL access zone allocation is included for distributed scheduling b3 =1, UL access zone allocation is included for distributed scheduling b4 – b7: reserved |
| If(b0 of Configuration_para_type == 1){ | | |
| Frame number | 4 bits | Frame number to take effect |
| DL indicator | 1 bit | 1: indicates DL subframe configuration is included |
| UL indicator | 1 bit | 1: indicates UL subframe configuration is included |
| Reserved | 2 bits | |
| if(DL indicator == 1) { | | |
| Number of frames | 8 bits | |
| for(i=0; i<Number of frame; i++){ | | |

| | | |
|--|--------|---|
| Number of relay zones | 2 bits | |
| reserved | 6 bits | |
| for(j = 0; j<Number of relay zone; j++){ | | |
| Transceiver mode | 2 bits | 00: Tx mode 01: Rx mode 11: Idle mode |
| OFDMA Symbol Offset | 8 bits | |
| Frame_Config_Duration | 6 bits | |
| } | | |
| } | | |
| } | | |
| if(UL indicator == 1){ | | |
| Number of frame | 8 bits | |
| for(i =0; i<Number of frame; i++){ | | |
| Number of relay zone | | |
| reserved | 6 bits | |
| for(j = 0; j<Number of relay zone; j++){ | | |
| Transceiver mode | | |
| OFDMA Symbol Offset | | |
| Frame_Config_Duration | | |
| } | | |
| } | | |
| } | | |
| If(b1 of Configuration_para_type == 1){ | | |
| Start Frame Number | 8 bits | 8 LSB bits of the frame number at MR-BS |
| Monitoring_Duration | 8 bits | Units are frame |
| Prefix | 2 bits | 00: The R-amble transmission and measurement is instructed by MR-BS. 01: The R-amble transmission and measurement shall be performed autonomously 10: The RSs shall report its neighbor measurement |

| | | |
|---|--------|--|
| | | results 11: reserved |
| if(Prefix == 00) { | | |
| Interleaving Interval\ | 8 bits | Units are frame |
| Iteration Number | 8 bits | Units are frame |
| N_stations | 8 bits | Number of stations received this message |
| For(i=0; i<Iteration; i++){ | | |
| Amble Index | 8 bits | The RS with the amble index in this list shall transmit the R-amble |
| } | | |
| for(j=0;j<N_stations - N_Transmitter; j++){ | | |
| Amble index | 8 bits | The RS with the amble index in this list shall receive the R-amble |
| } | | |
| } | | |
| } | | |
| If(Prefix = 01){ | | |
| Config_type | 3 bits | Bit [0] = 1: R-amble for synchronization is present. Bit [0] = 0: R-amble for synchronization is not transmitted. Bit [1] = 1: R-amble for random monitoring is present; Bit [1] = 0: any current monitoring operation is to be stopped by all RSs. Bit [2] = 1: any RS which does not support subordinate RSs should transmit the R-amble for advertisement purpose Bit [2] = 0: any RS which does not support subordinate RSs should not transmit the R-amble |
| if(Config_type[0] == 1){ | | |
| Synchronization cycle | 8 bits | N, Units are frame (see subsection 8.4.6.1.1.3.1) |
| Synchronization frame offset | 4 bits | Ks, Units are frame (see subsection 8.4.6.1.1.3.1) |

| | | |
|--|---------------|--|
| } | | |
| If(Config_type[1] == 1){ | | |
| Neighbor monitoring cycle | 4 bits | M, Units are frame (see subsection 8.4.6.1.1.3.2) |
| Neighbor monitoring frame offset | 4 bits | Km, Units are frame (see subsection 8.4.6.1.1.3.1) |
| Neighbor monitoring frame repetition | 8 bits | L, Units are frame (see subsection 8.4.6.1.1.3.1) |
| } | | |
| } | | |
| Report Request | 1 bit | 0:RSSI 1:CINR |
| } | | |
| If (b2 of Configuration_para_type == 1){ | | |
| <u>OFDMA symbol offset</u> | <u>8 bits</u> | |
| <u>OFDMA subchannel offset</u> | <u>8 bits</u> | |
| <u>Number of OFDMA symbols</u> | <u>7 bits</u> | |
| <u>Number of subchannels</u> | <u>6 bits</u> | |
| <i>Reserved</i> | <u>3 bits</u> | <u>Shall be set to zero</u> |
| } | | |
| If (b3 of Configuration_para_type == 1){ | | |
| <u>OFDMA symbol offset</u> | <u>8 bits</u> | |
| <u>OFDMA subchannel offset</u> | <u>7 bits</u> | |
| <u>Number of OFDMA symbols</u> | <u>7 bits</u> | |
| <u>Number of subchannels</u> | <u>7 bits</u> | |
| <i>Reserved</i> | <u>3 bits</u> | <u>Shall be set to zero</u> |
| } | | |
| Encoded TLV | variable | |
| } | | |

