Project	**IEEE 802.16 Broadband Wireless Access Working Group** <http://ieee802.org/16>	
Title	**Remedy on RS_BW-ALLOC_IE**	
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Re:	IEEE 802.16-08/028: "IEEE 802.16 Working Group Letter Ballot Recirc #28d: Announcement"	
Abstract	This contribution proposes a method to provide sufficient RS broadcast message relaying scheme.	
Purpose	Discuss and adopt proposed text in TG16j	
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Comments on RS_BW-ALLOC_IE

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Introduction

As defined in current draft 16j/D5, under centralized scheduling, the MR-BS should schedule the downlink access bandwidth in RS_Access-MAP message for its subordinate RS. It should notify the subordinate RS the allocated burst by RS_BW-ALLOC_IE in R-MAP message for sending RNG-RSP message or broadcasting UCD/DCD message. To handle this task, the RS has to find the RS_Access-MAP message associated with the RS_BW-ALLOC_IE in R-MAP message, which could be received in the different frame. That is, the RS has to be capable of handling the inconsistency between the received RS_Access-MAP and R-MAP messages, if any.

In order to simplify the procedure, we suggest moving the RS_BW-ALLOC_IE from the R-MAP message to the RS_Access-MAP message. As a result, the subordinate RS could compose the DL-MAP message and find the designated burst to send the broadcast message (such as RNG-RSP, UCD, DCD) by processing the RS_Access-MAP message.

For more than two hop MR system, the MR-BS should also schedule the downlink relay bandwidth in the RS_Relay-MAP message for its subordinate RS to broadcast RCD. For the same reason, we suggest moving the RS_BW-ALLOC_IE from R-MAP message to the RS_Relay-MAP message.

In order to facilitate the incorporation of this proposal into IEEE 802.16j standard, specific changes to the draft standard P802.16j/D5 are listed below.

Proposed Text

6.3.2.3.87 RS access MAP (RS_Access-MAP) message

Table 183z—RS Access MAP message format

Syntax	Size	Note
RS _Access-MAP_Message_Format{	-	-
Indicator	8bits	Bit 0: 0: Parameters of DL_Frame_Prefix remain same with the latest Configuration. 1: The parameters of DL_Frame_Prefix are updated. Bit 1: 0: RS shall use Normal map format, 1: RS shall use Compressed map format Bit 2: 0: DL-MAP not included 1: DL-MAP included Bit 3: 0: UL-MAP not included 1: UL-MAP included Bit 4: 0: SUB-DL-UL-MAP not included

		1: SUB-DL-UL-MAP included Bit 5: 0: HARQ-MAP not included 1: HARQ-MAP included Bit 6: 0: RS_BW-ALLOC_IE not include 1: RS_BW-ALLOC_IE include Bit ~~6~~7: reserved
If(bit #6 of Indicator == 1) {		
Nr of IE	4 bits	Number of IE
For (i = 0; i < Nr. of IE; i++) {		
RS_BW-ALLOC_IE ()	*variable*	
}		
}		
Padding	*variable*	Padding to reach byte boundary
}		

[insert the following Table on line 29 of page 79 as follows]

RS_BW-ALLOC IE is transmitted to an RS from MR-BS in RS_Access-MAP message. This IE provides the allocation to RS for transmission of messages composed by the RS over the access link to MSs. An RS may modify the CID in the DL-MAP IE pointed by RS_BW-ALLOC_IE.

RS_BW-ALLOC_IE () {		
Type	2bits	0b00:Response for RS BR header 0b01:RS broadcasting RNG-RSP 0b10: unsolicited DL bandwidth allocation to RS by MR-BS 0b11:reserved
If(Type==0x00) {		
TID	4bits	Transaction ID
DL-MAP IE index	8bits	RS shall transmit message on the burst described by the DL MAP IE within the DL-MAP message described in the RS_Access-MAP.
}else if(Type==0x01)	-	-
Frame Number Index	4bits	LSBs of relevant frame number
Number of rejected SS	4bits	Number of rejected SS (i.e. RNG-RSP message with status “Abort”)
INC_RNG_SUC	1bit	Include bandwidth for RNG-RSP message with status “success” (0b1:no, 0b1:yes)
INC_DFO	1bit	Include bandwidth for RNG-RSP message containing downlink frequency override (0b1:no, 0b1:yes)
DL-MAP IE index	8bits	RS shall transmit message on the burst described by the DL MAP IE within the DL-MAP message described in the RS_Access-MAP.
}else if(Type==0x10)	-	-
Message Type	2 bits	0b00: DCD 0b01: UCD 0b10-0b11:reserved
DL-MAP IE index	8bits	RS shall transmit message on the burst described by the DL MAP IE within the DL-MAP message described in the RS_Access-MAP.
}		
}		

[Modified the following subclause]

8.4.5.10.1.2 RS bandwidth allocation IE (RS_BW-ALLOC_IE)

This IE is transmitted to an RS from MR-BS. This IE provides the allocation to RS for transmission of RCD messages composed by the RS over the ~~access link and~~ relay link to MSs and subordinate RSs. ~~An RS may notify the CID in the DL-MAP IE pointed by RS_BW-ALLOC_IE~~

Table 496e-RS_BW-ALLOC IE format

Name	Length	Description
RS_BW-ALLOC_IE{	-	-
Type	5bits	RS_BW-ALLOC_IE = 0x01
Length	4bits	variable
RCID_IE()	4,8,12,16bits	RS basic CID in RCID_IE format (see 8.4.5.3.20.1)
~~Type~~	~~2bits~~	~~0b00:Response for RS BR header~~ ~~0b01:RS broadcasting RNG-RSP~~ ~~0b10: unsolicited DL bandwidth allocation to RS by MR-BS~~ ~~0b11:reserved~~
~~If(Type==0x00) {~~	~~-~~	~~-~~
~~TID~~	~~4bits~~	~~Transaction ID~~
~~DL-MAP IE index~~	~~8bits~~	~~RS shall transmit message on the burst described by the DL-MAP IE within the DL-MAP message broadcasted by the RS at the next available frame after receiving this IE.~~
~~}else if(Type==0x01)~~	~~-~~	~~-~~
~~Frame Number Index~~	~~4bits~~	~~LSBs of relevant frame number~~
~~Number of rejected SS~~	~~4bits~~	~~Number of rejected SS~~ ~~(i.e. RNG-RSP message with status "Abort")~~
~~INC_RNG_SUC~~	~~1bit~~	~~Include bandwidth for RNG-RSP message with status "success" (0b1:no, 0b1:yes)~~
~~INC_DFO~~	~~1bit~~	~~Include bandwidth for RNG-RSP message containing downlink frequency override (0b1:no, 0b1:yes)~~
~~DL-MAP IE index~~	~~8bits~~	~~RS shall transmit message on the burst described by the DL-MAP IE within the DL-MAP message broadcasted by the RS at the next available frame after receiving this IE.~~
~~}~~		
~~If(Type==0b10) {~~	~~-~~	~~-~~
~~Message Type~~	~~3bits~~	~~0b000: DCD~~ ~~0b001: UCD~~ ~~0b010-0b111:reserved~~
~~DL-MAP IE index~~	~~8bits~~	~~RS shall transmit message on the burst described by the DL-MAP IE within the DL-MAP message broadcasted by the RS at the next available frame after receiving this IE.~~
R-DL-MAP IE index	8bits	RS shall transmit message on the burst described by the R-DL MAP IE within the R-DL-MAP message broadcasted by the RS at the next available frame after receiving this IE.
}		
}		