Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Bandwidth Request for Non-Transparent RS**
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Re:	IEEE 802.16j-06/027: “Call for Technical Proposals regarding IEEE Project P802.16j”
Abstract	This contribution provides some text to clarify how a non-transparent RS with distributed scheduling function requests bandwidth for the R-UL and how the MR-BS handles the reception of MAC PDUs transmitted within the allocated BW.
Purpose	Discuss and adopt proposed text and message format.
Notice	
Release	
Patent Policy and Procedures	

Bandwidth Request for Non-transparent RS

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Introduction

This contribution provides some text to clarify how a non-transparent RS with distributed scheduling function requests bandwidth for the R-UL and how the MR-BS handles the reception of MAC PDUs transmitted within the allocated BW.

In summary, the RS may use the methods already available in IEEE Std 802.16 to request BW on the R-UL. Based on the case of the MAC signaling header Type 1 with the largest BR field of 19bits, this gives the total request size per header of 524288 bytes. Based on a maximum frame size of 20ms and minimum frame size of 2ms this enables the RS to request a maximum rate of 262Mbytes/s and 26.21Mbytes/s, respectively, based on sending a header in every frame. Therefore, this should be sufficient for the RS to indicate its bandwidth needs to the MR-BS. Also, RS may also support concatenate the received bandwidth requests.

The only clarification that is required is that the RS will be allocated an R-UL burst with CID set to the basic RSCID. However, the RS may transmit MS MAC PDU's in this allocated region, setting the CID in the MAC header to that of the SS transport CID for with the payload corresponds. Consequently, the MR-BS will expect for this type of RS to receive MAC PDUs in the R-UL allocation with CIDs associated with the SSs that the MR-BS knows are served by the RS. TO clarify this situation, some text is proposed.

Proposed Text Change

[***Insert a new subclause:***]

6.3.2.1.3 Relay MAC PDU Combination Header (R-MPCH)
The Relay MAC PDU Combination Header (R-MPCH) is used for RS to concatenate the received MAC PDUs and its own MAC PDUs into a new MAC PDU for single R-UL transmission. A R-UL concatenate CID will be assigned to this combined MAC PDU.
[***Insert new figure***]

<table>
<tr><td colspan="2">RHT (2)</td><td colspan="2">N_PDU (6)</td></tr>
<tr><td>CI (1)</td><td>reserved (2)</td><td colspan="2">N_PDU MSB (5)</td></tr>
<tr><td colspan="2">N_PDU LSB (1)</td><td colspan="2">Length MSB (7)</td></tr>
<tr><td colspan="2">Length LSB (1)</td><td colspan="2">CID MSB (7)</td></tr>
<tr><td colspan="4">CID MSB (8)</td></tr>
<tr><td colspan="4">HCS (8)</td></tr>
</table>

Figure xx Relay MAC PDU Combination Header Format

[***Insert a new table as indicated***]

Table xx—Relay MAC PDU Combination Header format

Name	**size**	**Description**
RHT	2 bits	Relay MAC Header Type 00=Relay MAC PDU Header for concatenated bandwidth requests 01,10, 11 = Other combinations
N_PDU	6 bits	Number of combined MAC PDU
CI	1 bits	CRC indicator 1= CRC is included by appending it to the PDU 0= No CRC is included
reserved	2 bits	
N_PDU	6 bits	Number of MAC PDU combined
Length	11 bits	Length of the PDU
CID	16 bits	CID for the combined MAC PDU
HCS	8 bits	Header Check Sequence

[Insert the following at the end of subclause 6.3.6.2]

For an RS, bandwidth requests reference the R-UL allocation requirements of an RS in order to enable it to relay buffered MAC PDUs received from the SSs connected to it. The bandwidth grant is addressed to the RS's basic CID and the RS shall use the burst allocated to transmit SS MAC PDUs to the MR-BS. The MR-BS shall expect to receive concatenated (see Section 6.3.3.2) MAC PDUs with the CIDs of SS transport connections that are associated with the RS to which the grant was made.