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

Yuefeng Zhou, Mike Hart, Sunil Vadgama

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 will 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.

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 Generic 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. Also, this proposal mentioned a possible method to use the allocated R-UL burst.

Proposed Text Change

6.3.2.2 Concatenation

[***Insert a new subclause 6.3.2.2.1***]

6.3.2.2.1 MAC PDU Combination for MR

RS may combine the received access-link MAC PDUs into a single MAC PDU for R-UL transmission to save MAC/PHY overhead. Figure 26 illustrates this concept for R-UL MAC PDU combination. The combined MAC PDU can be uplink MAC Management messages or user date. A new CID for combined MAC PDU will be applied to this combined MAC PDU. Management Message Combination subheader (MMC-subheader in 6.3.2.2.7), and User Data Combination subheader (UDC-subheader in 6.3.2.2.8) will be used to describe each combined MAC management message and user data respectively. Before combining the MAC PDUs, RS may categorize the received MAC PDUs based on the QoS demands, and then the MAC PDUs within same category may be combined.

[***Insert new figure***]

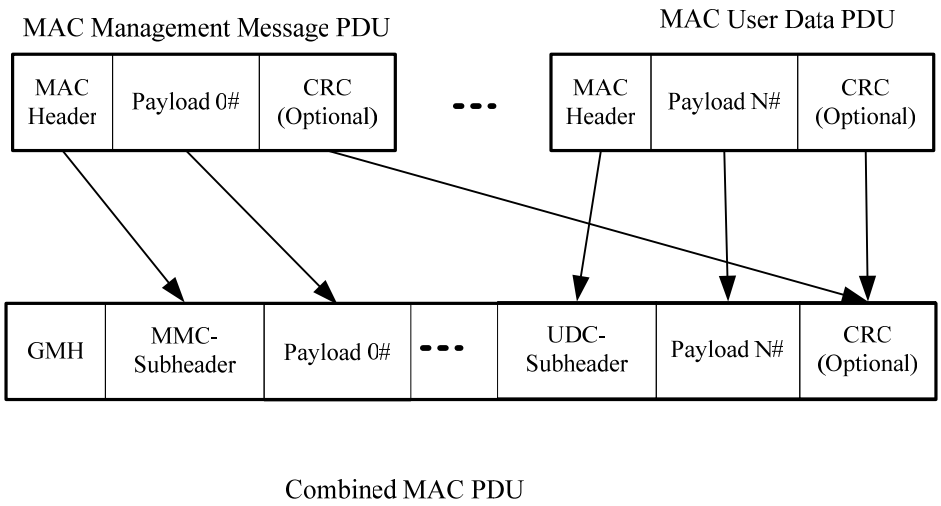

Figure 25—A new MAC PDU replaces all grouped MAC PDUs

[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.