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Title	MMR Protocol Stack	
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Re:	A response to a Call for Technical Proposal, http://wirelessman.org/relay/docs/80216j-06_027.pdf	
Abstract	In order to more efficiently support 802.16e MAC PDU forwarding by RSs, a new sub-layer R-MAC is suggested.	
Purpose	To incorporate the proposed text into the P802.16j Baseline Document (IEEE 802.16j-06/026)	
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MMR Protocol Stack

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Introduction

To efficiently support 802.16e MAC PDU forwarding by RSs, a new sub-layer R-MAC is proposed. The resulting new data protocol stack is shown in Figure 1. The R-MAC layer provides an extendable framework for various relay related functions, such as QoS control, routing control and etc.

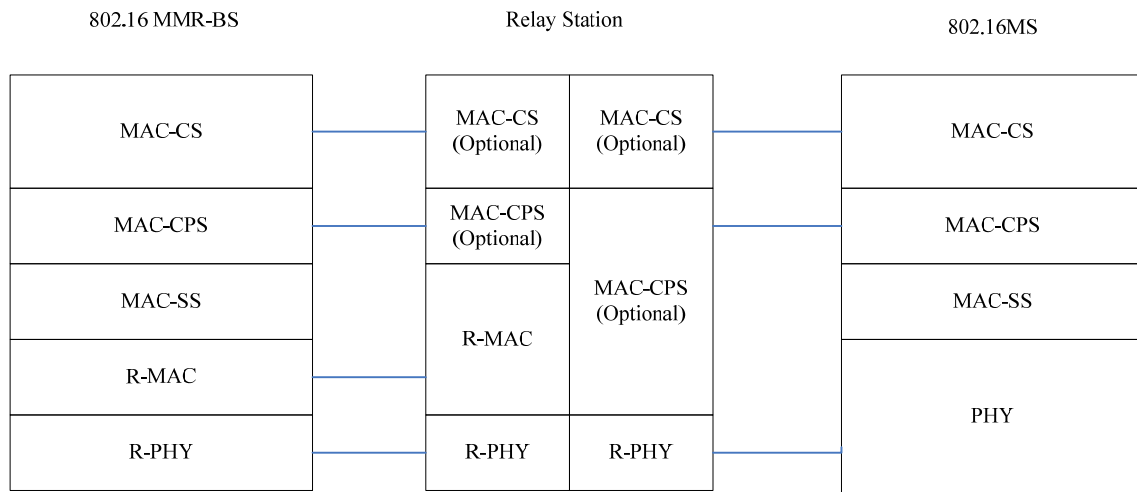


Figure 1 MMR Data protocol

The design principles of the R-MAC layer proposal should:

- Enable extensibility of functionality
- Minimize overhead

MAC-CS and MAC-CPS may be used for mobile RS usage scenario, see contribution C80216j-06_235 [1].

Proposed text change

[Insert a new section 4.1.1 MMR Protocol]

4.1.1 MMR Protocol

The R-MAC sub-layer is introduced to 802.16d/e protocol for efficient 802.16e MAC PDU relaying/forwarding and control functions. This sub-layer is applicable to the links between MMR-BS and RSs and between RSs. The resulting data protocol stack is shown in Figure XX.

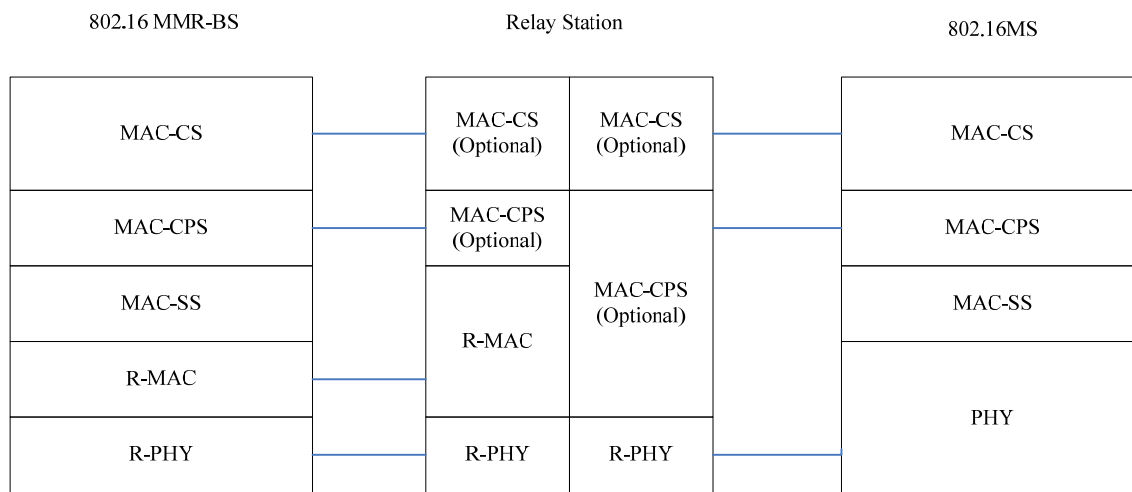


Figure XX. MMR Data Protocol

The R-MAC provides the concatenation of forwarded 802.16d/e MAC PDU and control functions, such as scheduling, routing, flow control and etc.

The R-PHY layer provides definition of physical layer design, such as, sub-channelization, modulation and code set and etc, for links between MMR-BS and RS and between RSs.

A relay station can optionally implement R-MAC sub-layer, or 802.16e MAC CPS function and MAC CS function.

If a relay station only implements R-PHY layer on the links connecting MMR-BS and/or other relay stations, this relay station is defined as a type 1 relay station; If a relay station implements R-PHY and R-MAC layers, this relay station is defined as type 2 relay station; If a relay station implements R-PHY and MAC-CPS layers, this relay station is defined as type 3 relay station; If a relay station implements R-PHY, R-MAC, MAC-CPS and MAC-CS layers, this relay station is defined as type 4 relay station.

The transport connection(s) of an MS can be established between MMR-BS and MS (end-to-end connection) or established between its serving station (MMR-BS or relay station) and the MS.

For type 1 relay stations, no any connection is established between MMR-BS and this relay station.

For types 2 and 3 relay station, no transport connection is established and only management connections are established for control purpose between MMR-BS and the relay station.

For type 4 relay station, the transport connection may be established for relaying MSs's traffic.

[1] "Moving RS operation", Hang Zhang, G.Q. Wang ,Peiying Zhu, Wen Tong, David Steer, Gamini Senarath, Derek Yu, Mark Naden, C80216j-06_235.