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Title	**Obtaining Sleep Mode Information in RS**	
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Re:	IEEE 802.16j-06/027: “Call for Technical Proposals regarding IEEE Project P802.16j”	
Abstract	In MR networks, if RS cannot obtain the sleep mode information, such as the event-based actions in sleep-mode MS, then it could not allocate resources to the MS properly. This proposal remedies the standard to fix this problem.	
Purpose	Discuss and adopt proposed text.	
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Obtaining Sleep Mode Information in RS

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1. Problem Statement

In WiMAX MR networks, MS in sleep mode may maintain triggers to perform event-based actions, such as sending MOB_SCN-REP, MOB_MSHO-REQ, and MOB_SCN-REQ messages to MR-BS. MS may include Enabled-Action-Triggered TLV in RNG-REQ or MOB_SLP-REQ message requesting to associate specific actions with certain triggers. In response to the RNG-REQ or MOB_SLP-REQ message, MR-BS shall transmit RNG-RSP or MOB_SLP-RSP message including Enabled-Action-Triggered TLV provided that it allows to activate the requested type of Power Saving Class. After receiving RNG-RSP or MOB_SLP-RSP message including the Enabled-Action-Triggered TLV, MS in sleep mode shall perform the actions indicated in the Enabled-Action-Triggered TLV following function/action specified in DCD or MOB_NBRADV message.

Therefore, in distributed case, RS shall allocate resources to this sleep-mode MS to properly perform the event-based actions. However, if the RS does not decode MOB_SLP-RSP messages, it may not allocate proper resources to MSs on time, thus the event-based actions may failed. On the other hand, if RS can know that an MS has switched to sleep mode by decoding the MOB_SLP-RSP message, it can cancel the resources allocated to this MS during the sleep period, thus saving bandwidth.

2. Proposed Remedy

RS may have the capability to listen and decode the MOB_SLP_RSP message to obtain the timing information for the event-based actions. For example, if the sleep mode is initialized by MS, as shown in Fig. 1, RS shall decode the MOB_SLP_RSP message sent by MR-BS to obtain enough timing information, thus it can allocate resources to MS on time for the event-based actions, also RS can cancel the bandwidth allocated to MS during the sleep period.

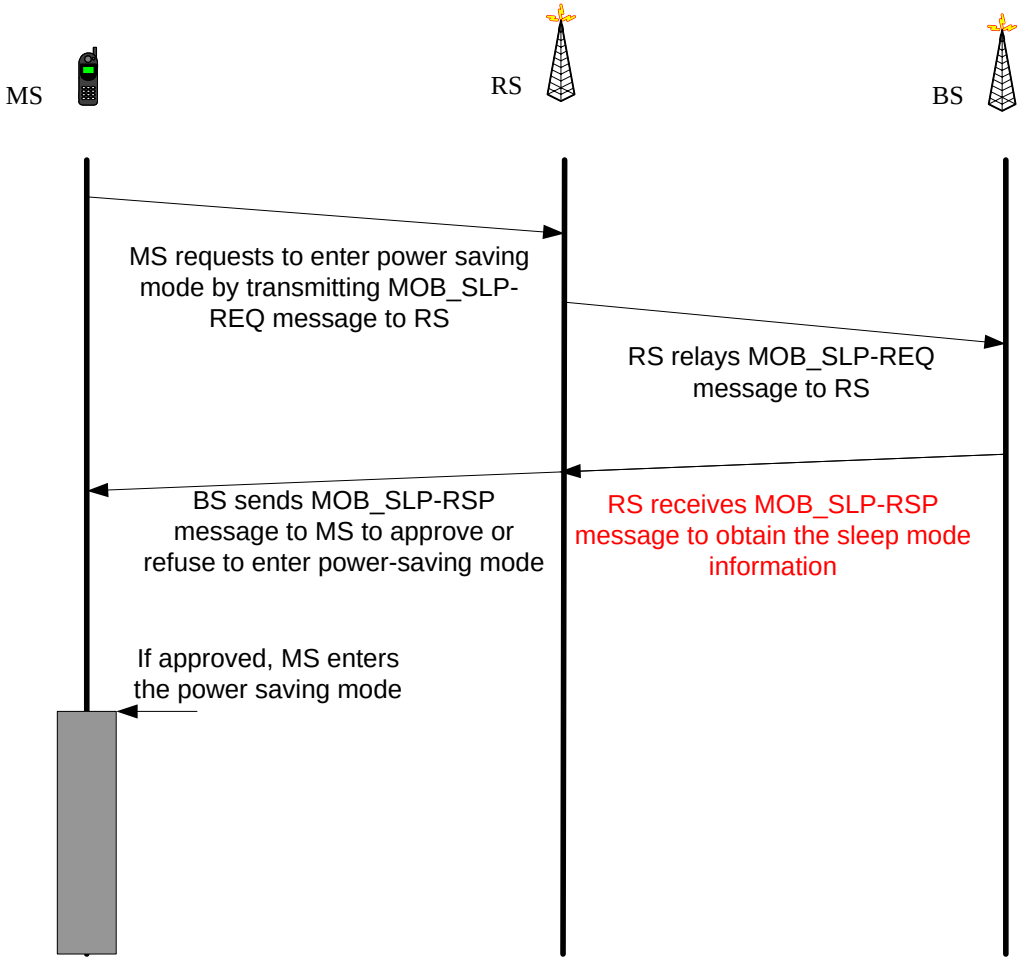

Fig. 1. RS decodes the MOB_SLP_RSP message for further scheduling

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3. Specific Text Change

6.3.21 Sleep mode for mobility-support MS

6.3.21.1 Introduction

[***Insert a new paragraph after the 13th paragraph in 6.3.21.1***]

MS in sleep mode may maintain triggers to perform event-based actions based on TLV encodings for CINR, RSSI, and RTD trigger (see Table 358.) received in DCD message or the TLV encodings for Neighbor BS CINR and Neighbor BS RSSI trigger (see Table 348e.) received in MOB_NBR-ADV message. For this purpose, MS may include Enabled-Action-Triggered TLV in RNG-REQ or MOB_SLP-REQ message requesting to associate specific actions with certain triggers. In response to the RNG-REQ or MOB_SLP-REQ message, BS shall transmit RNG-RSP or MOB_SLP-RSP message including Enabled-Action-Triggered TLV provided that it allows to activate the requested type of Power Saving Class. After receiving RNG-RSP or MOB_SLP-RSP message including the Enabled-Action-Triggered TLV, MS shall perform the action indicated in the Enabled-Action-Triggered TLV following function/action specified in DCD or MOB_NBRADV message. If MS does

not include Enabled-Action-Triggered TLV in the RNG-REQ or MOB_SLPREQ message, BS shall not include Enabled-Action-Triggered TLV in the RNG-RSP or MOB_SLP-RSP message. In this case, MS shall not perform and BS shall not expect the event-triggered action while the MS is in sleep mode. For the action indicated in the Enabled-Action-Triggered TLV, MS may transmit MOB_SCN-REPORT or MOB_SCN-REQ message and perform scanning and/or association without deactivating any Power Saving Class.

In MR networks, distributed RS shall decode the MOB_SLP-RSP messages sent by MR-BS to obtain the timing and the event-based action information, thus RS can schedule proper radio resource to the MS in sleep mode.