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Re:	This document supports a comment at Sponsor Ballot on 802.16e/D9 document.
Abstract	This document clarifies Sleep MS's behavior regarding Triggered Action.
Purpose	This document is submitted for review by 802.16e Sponsor Ballot members.
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Clarification of Triggered Action in Sleep Mode

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Introduction

At the last BRC, a contribution (C80216e-05_219r2) which proposes a method of MS supporting event-triggered actions was accepted. The contribution defines a few compound TLVs which are supposed to be included in DCD and NBR-ADV message and define conditions triggering corresponding actions MS has to perform.

However, the contribution seems not consider Sleep MS in detail. According to the current specification of IEEE P802.16e/D9, an MS, even in Sleep Mode, receives DCD and NBR-ADV message, which means MS's Sleep Mode operation may be affected by the TLVs directing event-triggered actions. The first purpose of Sleep Mode is to minimize MS's power consumption so that those event-triggered actions may not be always useful for Sleep Mode.

Although this function is negotiated through SBC-REQ/RSP (it seems not incorporated in D9), the negotiation is for trigger metric, not for action in Sleep Mode. Obviously, there may be a case where a MS may support the function in Normal Operation but does not want to perform event-triggered actions while it is in Sleep Mode.

In this contribution, we propose a TLV parameter which determines whether or not MS will perform event-triggered actions in Sleep mode. The TLV may be included in RNG-REQ/RSP or SLP-REQ/RSP messages which activate a type of power saving class.

Proposed Text Changes

[Insert the following text to line 20, pp. 166, 6.3.20.1 Introduction:]

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-Trigger 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-Trigger 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-Trigger TLV, MS shall perform the action indicated in the Enabled-Trigger TLV following function/action specified in DCD or MOB_NBR-ADV message. If MS does not include Enabled-Trigger TLV in the RNG-REQ or MOB_SLP-REQ message, BS shall not include Enabled-Trigger 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-Trigger TLV, MS may transmit MOB_SCAN-REPORT or MOB_SCN-REQ message and perform scanning and/or association without deactivating any Power Saving Class.

[Insert the following text to line 38, pp. 41, 6.3.2.3.5 Ranging Request (RNG-REQ) message:]

The following TLV parameter may be included in RNG-REQ message transmitted to request an activation of Power Saving Class.

Enabled-Action-Triggered
Indicates possible action upon reaching trigger condition

[Insert the following text to line 32, pp. 43, 6.3.2.3.6 Ranging Response (RNG-RSP) message:]

The following TLV parameter may be included in RNG-RSP message transmitted to permit an activation of Power Saving Class.

Enabled-Action-Triggered
Indicates possible action upon reaching trigger condition

[Insert the following text to line 23, pp. 90, 6.3.2.3.44 Sleep Request message (MOB_SLP-REQ):]
The following TLV parameter may be included in MOB_SLP-REQ message transmitted to request an activation of Power Saving Class.

Enabled-Action-Triggered
Indicates possible action upon reaching trigger condition

[Insert the following text to line 21, pp. 94, 6.3.2.3.45 Sleep Response message (MOB_SLP-RSP):]
The following TLV parameter may be included in MOB_SLP-RSP message transmitted to permit an activation of Power Saving Class.

Enabled-Action-Triggered
Indicates possible action upon reaching trigger condition

[Insert the following entry into Table 364a, pp. 519, as the last item:]

Name	Type	Length	Value (variable-length)
Enabled-Action-Triggered	11	1	Indicates action performed upon reaching trigger condition in Sleep Mode If bit#0 is set to 1, respond on trigger with MOB_SCAN-REPORT If bit#1 is set to 1, respond on trigger with MOB_MSHO-REQ If bit#2 is set to 1, on trigger, MS starts neighboring BS scanning process by sending MOB_SCN-REQ bit#3-bit#7: reserved. Shall be set to 0.

[Insert the following entry into Table 367, pp. 523, as the last item:]

Name	Type	Length	Value (variable-length)
Enabled-Action-Triggered	19	1	Indicates action performed upon reaching trigger condition in Sleep Mode If bit#0 is set to 1, respond on trigger with MOB_SCAN-REPORT If bit#1 is set to 1, respond on trigger with MOB_MSHO-REQ If bit#2 is set to 1, on trigger, MS starts neighboring BS scanning process by sending MOB_SCN-REQ bit#3-bit#7: reserved. Shall be set to 0.

[Insert the following text to line 63, pp. 576:]
11.17.3 Enabled-Action-Triggered

This value indicates the enabled action that MS performs upon reaching trigger condition in Sleep Mode. MS may include this TLV item in MOB_SLP-REQ message to request an activation of type of Power Saving Class. BS shall include this TLV in MOB_SLP-RSP message transmitted in response to the MOB_SLP-REQ message.

Type	Length	Value (variable-length)	Scope
3	1	Indicates action performed upon reaching trigger condition in Sleep Mode If bit#0 is set to 1, respond on trigger with MOB_SCAN-REPORT If bit#1 is set to 1, respond on trigger with MOB_MSHO-REQ If bit#2 is set to 1, on trigger, MS starts neighboring BS scanning process by sending MOB_SCN-REQ bit#3-bit#7: reserved. Shall be set to 0.	MOB_SLP-REQ/RSP