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Re:	Call for Maintenance Change Requests on IEEE Std 802.16
Abstract	This document suggests changes in TGe Draft Document IEEE 802.16e-2005 to clarify sleep mode during HO or Network Re-Entry
Purpose	Adopt into the current Maint TG draft
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The reset of Sleep Mode after Successful HO

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1. Motivation

HO Adhoc made a consensus in conference call on July 27th that MS should stop the sleep mode operation at Target BS(i.e. new Serving BS) when MS in sleep mode performs handover to Target BS during Availability Interval. This consensus results from the comment #644 discussed in the conference call.
In IEEE Std 802.16e-2005, it is defined that if MS wants to enter sleep mode immediately after HO or Network Re-Entry, MS includes Power_Saving_Class Parameters TLV encoding in the RNG-REQ message. In this case, BS shall transmit the unsolicited MOB_SLP-RSP message to the MS after handover.
It is not clear how the MS updates configuration of power saving class defined at previous serving BS after HO. Moreover, BS shall know information related to sleep mode of MS(i.e. definition of Power Saving Class) in advance.

This contribution is proposed to clarify the sleep mode operation during/after HO.

2. Text changes

[Modify Power_Saving_Class_Parameters on page 52 in the section 6.3.2.3.5 of IEEE Std 802.16e-2005 as follows]

The following parameter may be included in RNG-REQ message when the MS is attempting to perform handover and needs to inform target BS of its preference to define Power Saving Class~~continue in sleep mode after~~ during handover to target BS.

Power_Saving_Class_Parameters

Compound TLV to specify Power Saving Class operation.

[Modify Power_Saving_Class_Parameters on page 54 in the section 6.3.2.3.6 of IEEE Std 802.16e-2005 as follows]

The following parameter may be included in RNG-RSP message by the BS to ~~activate or deactivate~~ define and/or activate/deactivate Power Saving Class of type I, II and type III. In case of HO, this TLV is used only to define Power Saving Class.

Power_Saving_Class_Parameters

Compound TLV to specify Power Saving Class operation.

[Modify the fifth paragraph on page 229 in the section 6.3.21.1 of IEEE Std 802.16e-2005 as follows]

~~An MS performing handover may include Power_Saving_Class_Parameters in RNG-REQ message to indicate its preference to enter sleep mode after the handover. In this case, the BS shall transmit unsolicited MOB_SLP-RSP message to the MS after handover.~~

The MS shall stop the sleep mode before handover to the target BS.

After the MS completes handover to target BS the MS shall discard all the sleep mode related information associated with previous serving BS.

Also, new Serving BS shall regard any MS performing handover as operating in normal operation without entering sleep mode first.

MS may include Power Saving Class Parameters in RNG-REQ message. The scope of Power Saving Class parameters is confined to the HO process. MS may enter sleep mode after HO. If the MS enters sleep mode, it shall transmit MOB_SLP-REQ message or Bandwidth request and uplink sleep control header to activate the previously defined Power Saving Class. Also, BS may transmit MOB_SLP-RSP or DL Sleep control extended subheader in unsolicited manner in order to activate the previously defined Power Saving Class.

[Modify second paragraph on page 230 in the section 6.3.21.2 of IEEE Std 802.16e-2005 as follows]

6.3.21.2 Power Saving Classes of type I

Power Saving Class of this type is recommended for connections of BE, NRT-VR type.
For definition and/or activation of one or several Power Saving Classes of type I the MS shall send MOB_SLP-REQ or Bandwidth request and uplink sleep control header (for activation only); the BS shall respond with an MOB_SLP-RSP message or DL Sleep control extended subheader. The MS may retransmit MOB_SLP-REQ message if it does not receive the MOB_SLP-RSP message within the T43 timer.

Alternatively Power Saving Class may be defined/activated/deactivated by TLVs(i.e Power Saving Class Parameters TLVs) transmitte

ed in RNG-RSP
message. In case of HO, Power Saving Class Parameters TLVs in RNG-REQ/RSP are used only to define Power Saving Class.

[Modify second paragraph on page 232 in the section 6.3.21.3 of IEEE Std 802.16e-2005 as follows]

Power Saving Class becomes active at the frame specified as “Start frame number for first sleep window”. All sleep windows are of the same size as initial window. Sleep windows are interleaved with listening windows of fixed duration. Power Saving Classes of this type are defined/activated/deactivated by MOB_SLP-REQ/ MOB_SLP-RSP or Bandwidth request and uplink sleep control header/DL Sleep control extended subheader transaction. The MS may retransmit MOB_SLP-REQ message or Bandwidth request and uplink sleep control header if it does not receive the MOB_SLP-RSP message or DL Sleep control extended subheader within the T43 timer. The BS may send unsolicited MOB_SLP-RSP or DL Sleep control extended subheader to initiate activation of Power Saving Class. Once started, the active state continues until explicit termination by MOB_SLP-REQ/MOB_SLP-RSP messages or Bandwidth request and uplink sleep control header/DL Sleep control extended subheader. BS may send unsolicited MOB_SLP-RSP message or DL Sleep control extended subheader to deactivate Power Saving Class. Alternatively Power Saving Class of type II may be defined and/or activated /deactivated by TLVs transmitted in RNG-REQ and RNG-RSP message. In case of HO, Power Saving Class Parameters TLVs in RNG-REQ/RSP are used only to define Power Saving Class.

[Modify third paragraph on page 233 in the section 6.3.21.4 of IEEE Std 802.16e-2005 as follows]

Alternatively, Power Saving Class of type III may be activated /deactivated by TLVs transmitted in RNG-RSP messages. In case of HO, Power Saving Class Parameters TLVs in RNG-REQ/RSP are used only to define Power Saving Class.