Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Changes in Sleep Mode**
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Re:	Call for Work Group review of IEEE C802.16e-03/07r5 Working Document
Abstract	The document suggests change in condition that BS applies to decide whether MSS is still in Sleep state
Purpose	The document is contributed to support certain comment on the 802.16e Working Document
Notice	
Release	
Patent Policy and Procedures	

Changes in Sleep Mode

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1. Rationale

This document suggest changes in TGe working document IEEE 802.16e-03/07r5 to provide additional functionality for MSS in Awake mode, within listening interval.

As specified in TGe Working Document IEEE C802.16e-03/07r5, "If the BS receives an MPDU from an SS that is supposed to be in sleep-mode, the BS shall assume that the SS is no longer in sleep-mode."

Such a definition is logical if the MAC PDU is received at traffic connection as it means that the MSS had a data to transmit and therefore BS may suppose that there is more data (unless MSS explicitly informs BS on intention to switch to sleep mode).
But in many cases sending a MAC PDU does not mean presence of traffic. For example, RNG-REQ, DSA-REQ, DSx-RSP and many other management messages may constitute part of transaction that could be initiated and completed within listening interval(s). Their appearance says nothing on presence or absence of queued packets at MSS.

On the other hand, using, for example, [periodic] RNG-REQ within listening interval could be very useful as informs the BS that MSS is still alive and still belongs to the cell.

2. Specific Changes Suggested in TGe Working Document IEEE C802.16e-03/07r5

[Page 31, line 46]

If the BS receives an MPDU from an SS that is supposed to be in sleep-mode, and the MAC PDU is received at traffic connection or contains Grant Management subheader or belongs to one of types mentioned in the Table NNN, the BS shall assume that the SS is no longer in sleep-mode.

Table NNN – Types of Management MAC Messages that change MSS Sleep state as observed by BS

Message Name	Message Description
	Bandwidth Request header
REG-REQ	Registration request
ARQ-Feedback	ARQ Feedback
ARQ-Discard	ARQ Discard
ARQ-Reset	ARQ Reset
MOB_SLP-REQ	Sleep request
MOB_SCN-REQ	Scanning Interval Allocation Request message
MOB_MSSHO-REQ	MSS HO Request message
MOB_MSSHO-RSP	MSS HO Response message

Message Name	Message Description
MOB_HO-IND	HO Indication message

3. References

[1] IEEE 802.16e-03/07r5 TGe Working Document (2003-12-09)