Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**HARQ During Sleep-Mode and Scanning**	
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Re:	IEEE Std 802.16-2004/Cor2/D1	
Abstract	The document contains suggestions on solving IOT issues of HARQ during sleep-mode and scanning	
Purpose	Adoption of proposed changes into Std 802.16-2004/Cor2/D1	
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HARQ During Sleep-Mode and Scanning

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Problem definition:
The standard defines that HARQ ACK/NACK is sent in a synchronized manner. The ACKs or NACKs are sent after a pre-defined interval after the transmission of an HARQ sub-burst. On the other hand, sleep-mode allows a method for power save by defining sleep and listen periods. The listen and sleep windows can be flexibly defined. Moreover, sleep windows' size in PSC Type 1can change during sleep-mode (sleep windows are not fixed size).
As both HARQ and sleep-mode are essential features there is a need to clarify how the MS and BS act when HARQ transmissions are needed on a connection that is associated to an active PSC. Similar approach should be used in periodic scanning.

Suggested remedy:

In Cor2_D1, insert the following paragraph at the end of Section 6.3.17:
If a Power Saving Class containing an HARQ enabled connection is active or if there is an ongoing periodic scanning procedure, then the BS or MS may request the deactivation of the PSC or the scanning procedure upon traffic, or continue with the operation of the PSC or scanning and transmit data and ACK/NACK feedback during availability intervals (in case MS is in sleep mode) or during interleaving intervals (in case MS is performing periodic scanning). The BS shall not expect the MS to transmit ACK/NACK feedback during unavailability intervals or scan intervals if such allocations are scheduled.