Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	Recommended start frame capability
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Re:	IEEE 802.16e-2005
Abstract	Add recommended start frame capability to MOB_SCN_REQ message to allow the MS to inform BS when to start scanning process.
Purpose	Adopt proposed changes
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Problem:
MS requests scan interval and interleaving interval via MOB_SCN-REQ message. The following is missing: MS request for start frame in request message however the MS does not have the ability to ask the BS when to start scanning process. Since BS does not know the scanning capabilities of the MS it is necessary to allow the MS to inform the BS when there is the recommended start frame.

Modifications for scanning:

[In page 127 (after table 109h), modify as follows:]

The MOB_SCN-REQ message shall include the following parameters encoded as TLV tuples:

Recommended start frame (See 11.20)

HMAC/CMAC Tuple (See 11.1.2.)
The HMAC/CMAC Tuple shall be the last attribute in the message.

[Insert new subclause 11.20:]

11.20 MOB_SCN-REQ message encodings

Table 384c – MOB_SCN-REQ message encodings

Name	Type	length	Value
Recommended start frame	1	1	Recommendation of first frame of first scan interval (frame number is a frame offset measured from the frame in which this message was received). A value of one means that first the first scanning interval starts in the next frame. A value of zero means that MS does not have a recommendation value. The default value is zero.

[In last paragraph of page 234, modify as follows:]
An MS may request an allocation of a group of scanning intervals with interleaving intervals of normal operation and recommended start frame of first scanning interval (by including recommended start frame) using the MOB_SCN-REQ message for the purpose of reducing the number of MOB_SCN-REQ and MOB_SCN-RSP messages required to create multiple scanning opportunities when frequent scanning is required.

[First sentence of page 235, modify as follows:]
Scanning interval and interleaving interval repeat with the number of Scan iteration.

The BS may comply with the recommended start frame and set "start frame" in MOB_SCN-RSP message as recommended by MS (first frame of first scanning interval). The BS may set start frame to the first frame of the second scanning interval. The BS may set start frame to any other value, disregarding MS recommendation.

When the Trigger Action in the DCD message in encoded as 0x3, the MS…

Modifications for sleep:

[In section 6.3.21.1, page 228, modify as follows:]

During Unavailability intervals for MS, the BS may buffer (or it may drop) MAC SDUs addressed to unicast connections bound to an MS. The BS may choose to delay transmission of SDUs addressed to multicast connections until the following Availability Interval, common for all MSs participating in the multicast connection.

The MS may initiate sleep mode by transmitting MOB_SLP-REQ message, which defines the requested sleep profile.
The BS may comply with the start frame as recommended by the MS and set "start frame" in MOB_SLP-RSP message as recommended by MS (first frame of unavailable interval). The BS may set start frame to the first frame of the second unavailable interval. The BS may set start frame to any other value, disregarding MS recommendation.

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.