Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**MOB_SCN-RSP Offset**	
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Re:	802.16 corrigendum 2	
Abstract	This contribution offers modifications to the text for the MOB_SCN-RSP offset that allows proper operation when using links with H-ARQ enabled.	
Purpose	Review and approve.	
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MOB_SCN-RSP Offset with H_ARQ

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Abstract

Currently the *Start frame* in the MOB_SCN-RSP message is defined as a frame offset from the time MS successfully receives the MOB_SCN-RSP. The MS uses the offset to determine the first frame of its first scanning interval.

In the case of retransmission due to HARQ, the start frame derived by the MS for starting the first Scan Interval and start frame sent by the BS for the beginning of the first Scan Interval will not be the same. This can have the MS and BS start their respective Scan Intervals at different times. This will interfere with successful scanning operation.

In one scenario, an UL BW request from the MS can cancel the Scanning if the UL BW request arrives at the BS during Scan Duration. If the Scan durations of the MS and BS are out of sync then there is a greater chance that the MS sends UL BW request during BS Scan duration cancelling the entire Scan Schedule. There could be other issues with data loss etc.

This contribution proposes that the *Start frame* should be an absolute frame reference that is independent of any retransmissions. In order to provide sufficient flexibility in scheduling the beginning of the Scan Interval, the size of the *Start frame* field is expanded to 8 bits, allowing specification of a start frame up to 1.28 seconds (256×5ms) from the original transmission of the MOB_SCN-RSP message.

Recommended Changes

Table 109i—MOB_SCN-RSP message format

Syntax	Size	Notes
MOB_SCN-RSP_Message_format() {	—	—
Management Message Type = 55	8 bits	—
…	…	…
if (Scan Duration !=0) {	—	—
Start frame	~~4 bits~~ 8 bits	—
~~*Reserved*~~	~~1 bit~~	~~Shall be set to zero.~~
Interleaving interval	8 bits	Duration in frames.
Scan iteration	8 bits	—
~~*padding*~~	~~3 bits~~	~~Shall be set to zero.~~
N_Recommended_BS_Index	8 bits	Number of neighboring BS to be scanned or associated, which are using BS index that corresponds to the position of BS in MOB_NBR-ADV message.
If(N_Recommended_BS_Index!=0){		
…	…	…

…

Start Frame

~~Measured from the frame in which this message was received. A value of zero means that first Scanning Interval starts in the next frame.~~ Represents the 8 least significant bits of the absolute frame number in which the first Scanning interval starts