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Title	DL and UL Radio Resource Reporting in the DCD and UCD message	
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Re:	IEEE 802.16 Session #48 over the phone CBR session	
Abstract	This contribution proposes the updates of IEEE 802.16g D8 document in order to obtain loading information from the Base Station	
Purpose	Update 802.16g draft: MS HO decision factoring the BS loading figures.	
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DL and UL Radio Resource Reporting in the DCD and UCD message

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1. Introduction

Currently in 802.16g/D8, the Non-pre-assigned DL or UL radio resource encoding information of neighboring BSs is reported in the MOB_NBR-ADV message. However, the serving BS needs to report it as well. By removing the TLVs from sections 11.18.2 and 11.18.3 and adding them to the UCD and DCD message in tables 349 and 350 respectively this situation is corrected.

In addition, the MS needs the threshold values for both the DL and UL radio resources in order to determine whether it should consider the channel as overloaded and move to the next one for synchronization and ranging. The two thresholds are defined as constant system parameters. The BS uses these thresholds to determine whether to update its DCD/UCD change configuration count.

2. Proposed Text Change

Remedy 1:

Add two constant parameters for the threshold values of the loading information.

[Add the following entries to Table 342]:

Table 342 Parameters and Constants

Systems	Name	Time references	Minimum Value	Default Value	Maximum Value
MS, BS	Available_DL_radio_resources_system_parameter	The threshold value of the Non-pre-assigned DL radio resources such that the MS will move to next channel for synchronization and ranging if the Non-pre-assigned DL radio resources are less than the threshold value. The BS will update its DCD configuration change count if the Non-pre-assigned DL radio resources cross this value.			100%
MS, BS	Available_UL_radio_resources_system_parameter	The threshold value of the Non-pre-assigned UL radio resources such that the MS will move to next channel for synchronization and ranging if the Non-pre-assigned UL radio resources are less than the threshold value. The BS will update its UCD configuration change count if its Non-pre-assigned UL radio resources cross this value.			100%

Remedy 2:

In order to factor the loading information when determining the target BS for initial entry and handover, the radio loading condition is provided in the DCD message.

[Add to table 358 – DCD channel encoding the following entry]:

Name	Type (1 Byte)	Length	Value	PHY Scope

MIH Capability Support	55	1	Indicates the capability of IEEE 802.21 Media Independent Handover Services. Setting each bit to1 indicates corresponding service is supported. - Setting bit # 0 to 1 indicates MIH services indicated through bit #1~3 are supported by the current BS. - Setting more than one of bit #1~3 without setting bit #0 indicates existence of an MIH service entity within the Layer 2 broadcast domain of the current BS. In this case transport MIH MAC management message (MOB_MIH_MSG) is not supported by the BS. - When bit # 4 is set to be 1, MS is allowed to transmit MIH information service request MIH function frame TLV (11.1.9.1) in PKM-REQ. - When bit # 5 is set to be 1, MS is allowed to transmit MIH function frame TLV (11.1.9.1) for ES/CS Capability discovery in PKM-REQ. Bit # 0 = MIH (Media Independent Handover) support Bit # 1 = Event Service Support Bit # 2 = Command Service Support Bit # 3 = Information Service Support Bit # 4 = Information Service Support during network entry Bit # 5 = ES/CS capability discovery support during network entry Bit #6~7*: reserved*	All
Non-pre-assigned DL radio resources	23	1	Indicates the average percentage of non-pre-assigned physical radio resources for DL where averaging shall take place over a time interval which shall be a configurable value (with a default value of the last 200 frames) common to all BS within an operator network. Non-pre-assigned physical radio resources shall be defined as the set of subchannels and/or symbols within a radio frame, which are not used by any non-best-effort service flow class as identified by either the uplink grant scheduling type or the data delivery service as identified in the service flow encodings 0x00: 0% 0x01 : 1%, ..., 0x64 : 100% 0x65 - 0xFE : reserved, 0xFF indicates no information available	All

(Note to the editor: MIH capability support was introduced in SB01 session 47 and Non-pre-assigned- DL radio

message in the SB02 phone CBR session)

Remedy 3:

There is no need to specify the Non-pre-assigned DL/UL radio conditions in the MOB_NBR-ADV. It is moved into the DCD and UCD sections and will be advertised by the MOB_NBR-ADV message when the DCD/UCD values of the neighboring BS is different than the serving BS.

[Remove sections 11.18.2 and 11.18.3 from 802.16g]:

Remedy 4:

In order to factor the loading information when determining the target BS for initial entry and handover the radio loading condition is provided in the UCD message.

[Add to table 349 – UCD common channel encoding the following entry]:

Name	Type (1 Byte)	Length	Value
Non-pre-assigned UL radio resources	24	1	Indicates the average percentage of non-pre-assigned physical radio resources for UL where averaging shall take place over a time interval which shall be a configurable value (with a default value of the last 200 frames) common to all BS within an operator network. Non-pre-assigned physical radio resources shall be defined as the set of subchannels and/or symbols within a radio frame, which are not used by any non-best-effort service flow class as identified by either the uplink grant scheduling type or the data delivery service as identified in the service flow encodings 0x00: 0% 0x01 : 1%, ..., 0x64 : 100% 0x65 - 0xFE : reserved, 0xFF indicates no information available