Project	**IEEE 802.16 Broadband Wireless Access Working Group** <http://ieee802.org/16>	
Title	**RS UL Access Zone DCH BW Request for Semi-Centralized Scheduling**	
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Re:	This document is in response to call for technical comments and contributions IEEE 802.16j-07/019 dated 2007-06-07.	
Abstract	This contribution extends UL DCH request and allocation process currently in baseline for the relay zone to the access zone under centralized control. With DCH allocated in the access zone by the MR-BS, the RS can directly response to MS BW requests using resource within the access zone DCH. With both access zone and relay zone DCH, efficient transport of both MS and RS signaling and date traffic through DCH can be achieved under semi-centralized scheduling by the RS.	
Purpose	To incorporate the proposed text into the P802.16j Baseline Document (IEEE 802.16j-06/026r4)	
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RS UL Access Zone DCH BW Request for Semi-Centralized Scheduling

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Nortel

Introduction

The UL Dedicated Channel (DCH) request, allocation and update processes defined in the current baseline is for the creation and continuous operation of DCH for the relay link. The UL DCH can enable effective transport of both signaling and data traffic between RS and MR-BS in the multi-hop network with minimal signaling and delay overheads. However, under centralize control, the MS bandwidth requests in the access link are still required to relay all the way back to the MR-BS for centralized resource allocation. Even with DCH operating through the intermediate relay links, this round trip delay imposes an undesirable bottleneck on the performance of the services provided to the MS.

Proposal

The bottleneck described in the introduction can be removed by extending the UL DCH request, allocation and update processes in the relay zone to the access zone. With DCH allocated in the access zone by the MR-BS, the RS can directly response to MS bandwidth requests using resource within the access zone DCH. This completes the UL dedicated pipe end-to-end from the MS to the MR-BS and enables efficient transport of both MS and RS signaling and date traffic to the MR-BS under semi-centralized scheduling by the RS. The only different in the access zone DCH request process is that the request is done in number of slots instead of bytes.

Text Proposal

++++++++++++++++ Start Text Proposal ++

[Add the following subclause]

6.3.6.7.4 Dedicated resource in access zone

Under centralized control, the MR-BS may allocate dedicated resource in the UL access zone to the RS without an explicit request from the RS. The allocation is done using RS_UL_DCH assignment IE (see 8.4.5.9.2) and indicate an access zone assignment. The RS can independently schedule resource within the access zone DCH to directly response to MS bandwidth requests. If the MR-BS does not allocate dedicated resource in the UL access zone to an RS, the RS may request an allocation using RS UL_DCH request header (see 6.3.2.1.2.2.2.2).

If necessary, an MR-BS can terminate or decrease the bandwidth and/or the allocation interval of the access zone dedicated resource without request from an RS.

[Change Figure 35c on page 11 as indicated]

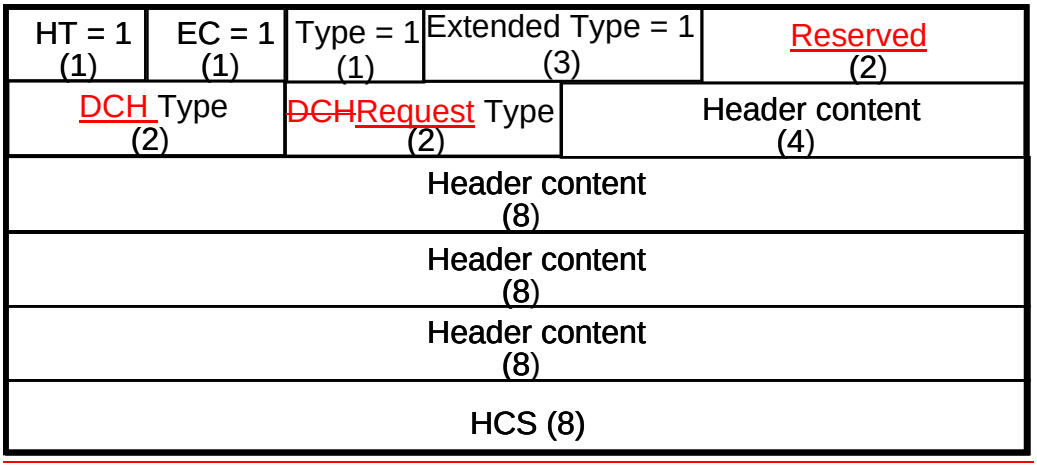

Figure 35c – RS UL_DCH request header

[Change Table 19c on page 11 as indicated]

Syntax	**Size**	**Notes**
MAC Header() {		
HT	1 bit	Shall be set to 1
EC	1 bit	Shall be set to 1
Type	1 bit	Shall be set to 1
Extended TYPE	3 bits	Shall be set to 001 for RS UL_DCH request header
Reserved	2 bits	
DCH TYPE	4 bits 2 bits	0000 = DCH Request Relay zone 01 = Access zone 0001**10** - 11**11** = *Reserved*
if(DCH TYPE == 0000) || (DCH TYPE == 01){		DCH Request
DCHRequest TYPE	2 bits	00 = DCH Request Incremental 01 = DCH Request Aggregate 10 = DCH Request Rate Based 11 = Reserved
if(DCHRequest TYPE == 00){		DCH Request Incremental
Bandwidth request	16 bits	Number of bytes requested by the RS. Relay zone request in number of bytes. Access zone request in number of slots. Zero in this field indicates DCH release request.
N	4 btisbits	Allocation repeats once every N frames
}elseif (DCHRequest TYPE == 01){		DCH Request Aggregate
Bandwidth request	16 bits	Number of bytes requested by the RS. Relay zone request in number of bytes. Access zone request in number of slots. Zero in this field indicates DCH release request.
N	4 bits	Allocation repeats once every N frames
}elseif (DCHRequest TYPE == 10){		DCH Request Rate Based (only for relay zone request)

[Change Table 496dc on page 162 as indicated]

Syntax	Size	Notes
RS_UL_DCH assignment IE {		
Type	5 bits	
Length	4 bits	
RSCID	8 bits	Reduced basic CID of the RS
Update type	2 bits	00 = Normal 01 = Service flow based 10 = Access zone ~~10 to~~ 11 = Reserved
If (Update type == 01) {		**If service flow based update**
Throughput size	24 bits	Amount of throughput update in byte/s
Access RSCID	8 bits	Reduced basic CID of the access RS of the MS that completed the service flow event
}		
Assignment type	2 bits	00 = Incremental (Add the specified resource to UL DCH) 01 = ~~Aggregate~~ Removal (Remove the specified resource from UL DCH) 10 = ~~Remove~~ Aggregate (An aggregate assignment with no resource means UL DCH removal) 11 = ~~Remove all~~ Reserved

++++++++++++++++ End Text Proposal ++