

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Corrections to CINR feedback through CQI Channels	
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Re:	Call for comments, Sponsor Ballot on 802.16e/D6	
Abstract		
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Corrections to CINR feedback through CQI Channels

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1 Problem Statement

There are three possible ways to assign a CQI resource to an MSS in 802.16e:

- CQICH Enhanced Allocation IE: assigns a periodic CQI allocation with 6-bit encoding.
- DL HARQ sub-burst IEs: The sub-burst allocation IEs provide the ability to assign a periodic CQI resource.
- Feedback Polling IE: yet another IE that can be used to assign CQI resources to multiple MSSs.

The text does not specify to what the CINR measurement relates. Measurements on the preamble, on pilots, and even on data subcarriers of different zones, will result in totally different values due to varying boosting levels, cell loading, and reuse factor.

Furthermore, when adaptive beamforming is employed, CINR measurements will vary greatly depending on the subchannel used for measurement (due to different beamforming on different subchannels).

The BS should specify the unique zone (by means of zone index), and subset of major groups (for PUSC reuse-1 zone) on which the SS shall measure CINR. Specifying the subset of major groups is important for sub-sectorized reuse-1 deployments.

This information is best attached to the CQI allocation, as it allows specifying different parameters for each allocated CQI resource. Additional overhead is minimal since an option exists to carry the previous configuration forward to future CQI allocations.

2 Detailed Text Changes

[Add the following entries to all tables listed below, immediately following the ‘Duration’ entry:

Table 285n (“DL HARQ Chase sub-burst IE format”)

Table 285o (“DL HARQ IR CTC sub-burst IE format”)

Table 285p (“DL HARQ IR CC sub-burst IE format”)

Table 302a (“COICH Enhanced allocation IE format”)

]

Syntax	Size	Notes
...		
CINR type included	1 bit	
If (CINR type included == 1) {		
Zone index	3 bits	The index of the zone on which to report CINR. The BS shall ensure that the zone corresponding to this index shall have the same permutation type in all frames until the COICH is de-allocated. The first zone in the frame has index 0.
If (Zone == PUSC with ‘use all SC = 1’) {		Refers to the permutation parameters of the zone for which CINR shall be reported.
PUSC Major group config indication	1 bit	If ‘0’ then CINR report may refer to any subchannel in the PUSC zone.
If (Major group config indication == 1) {		
PUSC Major group bitmap	6 bits	CINR shall only be estimated for the subchannels of PUSC major groups for which the corresponding bit is set. Bit #k refers to major group k.
}		
}		
}		
Averaging parameter included	1 bit	
If (Averaging parameter included == 1) {		
Averaging parameter	4 bits	Averaging parameter α_{avg} used for deriving CINR estimates reported through COICH.
}		

[Add the following text after each of the tables]

CINR type included

[Indicates whether an update to the CQI configuration exists in the IE. A value of ‘0’ indicates that the SS shall perform CINR measurements using the latest received CQI configuration.](#)