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Re:	IEEE P802.16e/D10
Abstract	This is a consensus reply comment to .16e in order to fix the
Purpose	Discuss and approve.
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Editorial changes in .16e in response to Comment 108

Masoud Olfat(Sprint Nextel), Peiying Zhu(Nortel) and Charlie Zhang(Nokia)

Introduction

We propose editorial text changes to make section 8.4.5.4.10 and 8.4.5.4.10.1 consistent in both Cor1/D4 and .16e. This document describes the text changes necessary in .16e/D10.

In this revision r1, we correct one section reference from 8.4.5.4.15 to 8.4.5.4.16. Many thanks to Kyunbyoung Ko of Samsung for brining it to our attention.

Proposed text changes:

[Delete text in 8.4.5.4.10 from line 50, page 346 to line 57, page 347]:

[Insert following text at the beginning of section 8.4.5.4.10.1]:

MIMO capable MS shall measure post processing CINR for each individual layers as shown in Figure 230a.When the FAST_FEEDBACK subheader Feedback Type field is "00", the MS shall report the post processing average CINR (Avg_CINR) , as defined in (106a) below. When BS requests MS feedback through CQICH_Alloc_IE() or CQICH_Enhanced_Alloc_IE() with '00' feedback_type field, MS shall report Avg_CINR or individual layer CINR as described in 8.4.5.4.12 and 8.4.5.4.16

For vertically encoded MIMO system, defined the averaged CINR (Avg_CINR) as

$$Avg\_CINR = e^{C(d,y|H)} - 1 \qquad (106a)$$

where C(d,y|H) is the receiver-constrained mutual information conditioned on knowing the channel knowledge. Note that d is the transmitted signal, y is the post-processing receive signal and H is the channel matrix between transmit and receive antennas. For LMMSE receiver, the individual post-detector-processing signal to noise ratios are given as $CINR_1, \ldots, CINR_N$, as shown in Figure 230a, and $C(d,y|H) = \frac{1}{N}\sum_{n=1}^{N} \log(1 + CINR_n)$. In this case $Avg\_CINR = \left(\prod_{n=1}^{N}(1 + CINR_n)\right)^{1/N} - 1$,when the individual post-detector-processing CINR is high, the average CINR is $Avg\_CINR \approx \frac{1}{N}\sum_{n=1}^{N} CINR_n \quad (\text{in dB})$. For ML MIMO detectors case:

$C(d,y|H) = \frac{1}{N}\log\det(I_N + H^H R^{-1} H)$, where I_N is an N by N identity matrix and R is the correlation matrix of interference plus noise measured at MS.

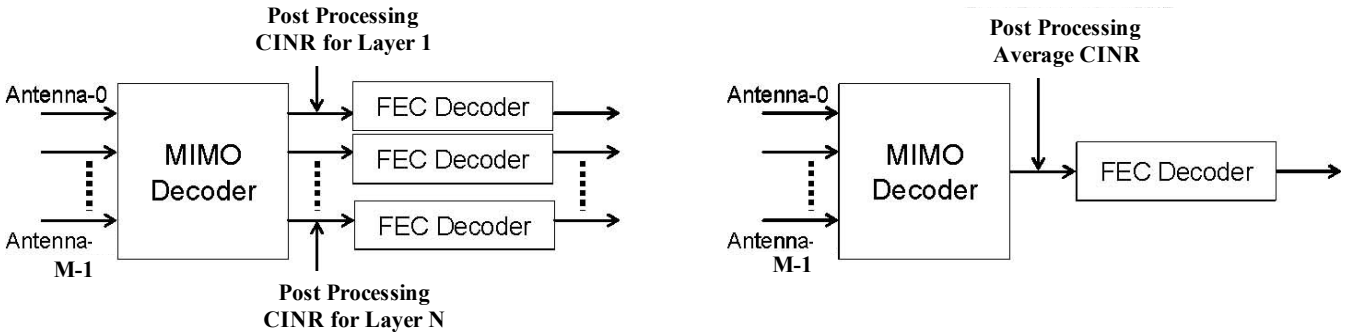

Figure 230a – Post Processing CINR for MIMO Region