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| **Title** | Editorial changes to .16e in response to comment 108 |
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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

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## 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.

## 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 8.4.5.4.15

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

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

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 $\text{Avg\_CINR} = \left(\prod_{n=1}^{N}(1 + CINR_n)\right)^{1/N} - 1$ ,when the individual post-detector-processing CINR is high, the average CINR is $\text{Avg\_CINR} \approx \frac{1}{N}\sum_{n=1}^{N} CINR_n \quad (\text{in dB})$ . 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.

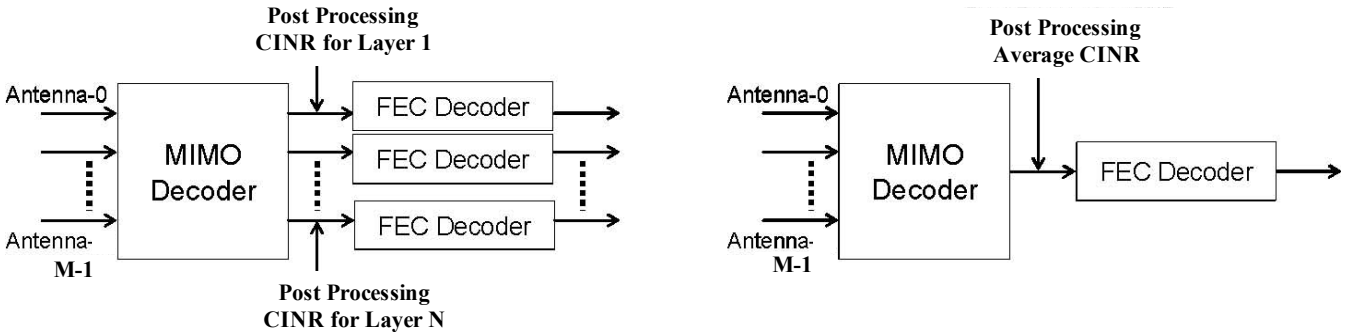


Figure 230a – Post Processing CINR for MIMO Region