Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Reply to comment #5484, contribution 289 "Corrections to fast DL S/N measurements"**
Date Submitted	**2005-06-13**
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Re:	IEEE P802.16e/D8
Abstract	This contribution suggested a modification of the contribution C802.16e-01/289 in order to address few editorial changes.
Purpose	Discuss and approve.
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Introduction

This contribution suggests a modification to the contribution C802.16e-05/289 for comment # 5484 to address some editorial changes. Specifically, I moved the 4 bit S/R reporting to the proper section 8.4.5.4.10.1 and added back the post processing S/N definition diagram, which was in D6 and nor sure why it was removed. (One reason may be that the same contents are added in the corrigenda). However, .16e is an amendment for IEEE802.16-2004 baseline, if people does not read the corrigenda document, then the post processing S/N definition is missing. To be consistent, I added the diagram and made sure that there is no conflict with the corrigenda D3.

Proposed text changes:

[Insert the following text in the section 8.4.5.4.10.1 (page 321, line 53)

MIMO capable SS shall measure post processing S/N for each individual layers as shown in Figure 230a.
The SS shall report the post processing CINR averaged over layers. When BS requests SS feedback through
CQICH_Alloc_IE() SS shall report average S/N or individual layer S/N as described in sections 8.4.5.4.12.
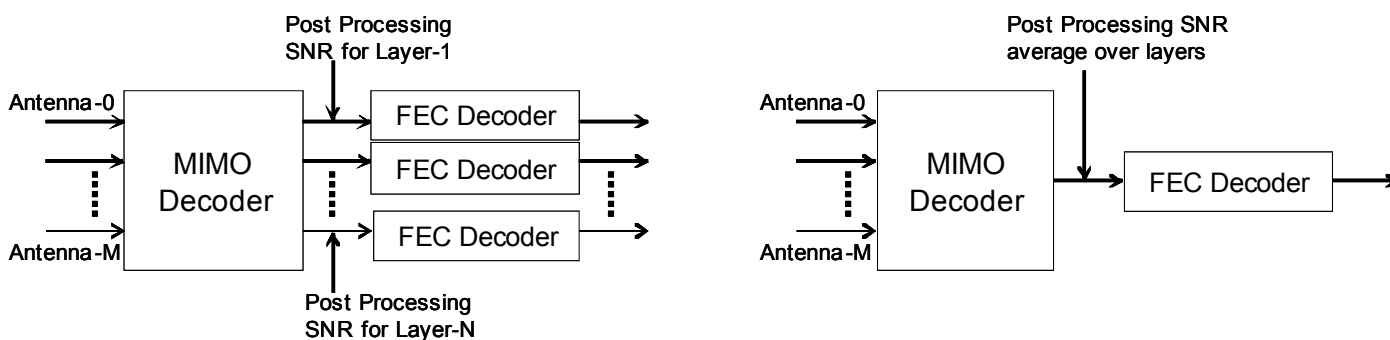
Post Processing SNR for Layer-1

Post Processing SNR average over layers

Antenna-0 → MIMO Decoder → FEC Decoder →
Antenna-M → MIMO Decoder → FEC Decoder →

Post Processing SNR for Layer-N

Antenna-0 → MIMO Decoder → FEC Decoder →
Antenna-M →

Figure 230a—Post processed S/N for MIMO region

When the Feedback_type field in CQICH_Enhanced_Alloc_IE() is 0b000 with CQICH type 0b101 the following formula shall be used:

$$payload\_bits = \begin{cases} 0, & S/N < 1+B \\ n, & (2n-1+B) \le S/N < (2n+1+B),\ 0 \le n \le 15 \\ 15, & S/N \ge 29+B \end{cases}$$

where B is the positive integer value indicated in the SN Reporting Base IE (see 11.7.27). B shall default to "3" if the SN Reporting Base IE was not included in the REG-RSP.

[Replace the contents of 8.4.5.4.10.5 (page 328, line 33 thru page 329, line 19) with the following text]:

When the FAST_FEEDBACK allocation subheader Feedback Type field is 0b00 or the MIMO_Permutation_Feedback_Cycle field in the CQICH_Alloc_IE() is 0b00 (see section 8.4.5.4.12), or the Feedback_type field in CQICH_Enhanced_Alloc_IE() is 0b000-0b011 with CQICH type 0b000, 0b001 or 0b100 (see 8.4.5.4.15), the MS shall report the S/N it measures on the DL. The following formula shall be used:

$$payload\_bits = \begin{cases} 0, & S/N < B \\ n, & (n-1+B) \le S/N < (n+B),\ 0 \le n \le 31 \\ 31, & S/N \ge 30+B \end{cases}$$

where B is the positive integer value indicated in the SN Reporting Base IE (see 11.7.27). B shall default to "3" if the SN Reporting Base IE was not included in the REG-RSP.

The BS may allocate one or multiple CQICH channels to the MS in UL_MAP for the purposes of Fast DL Measurement. If a single CQICH is allocated, MS shall report the average post processing S/N. If more than one CQICH is allocated, the MS shall report post processing S/N of individual layers in order of layer index.

[On page 527, line 21, insert new subclause 11.7.27]:

11.7.27 SN Reporting Base

SN Reporting Base indicates the (negative of the) base value that the MS shall use in sending fast DL measurement feedback on an enhanced fast-feedback channel.

Type	Length	Value	Scope
-	1	A positive integer in the range 0-255; the base value used in reporting shall be the negative of this value.	REG-RSP