CCITT SGXV
Working Party XV/1
Specialists Group on Coding for Visual Telephony

Document #320

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SOURCE : NTT, KDD, NEC and FUJITSU

TITLE : FILTER IN THE CODING LOOP

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1. Introduction

This document compares control methods and applications (luminance only or luminance and chrominance) of the loop filter on the different quantizing characteristics by Flexible Hardware.

2. Comparison of the effects

We consider next five cases for the purpose of the comparison on the conditions described in Annex. The step size ratio of chrominance to luminance is written in parentheses.

a)	filter off	(1:1)
b)	filter off	(1:2)
c)	filter on (MC based control, luminance)	(1:2)
d)	filter on (side information control, luminance)	(1:2)
e)	filter on (side information control, luminance & chrominance)	(1:2)
f)	filter on (side information control, luminance & chrominance)	(1:1)

Pictures made by FH will be demonstrated by VCR at the meeting.

3. Conclusion

As a result, the picture quality shows that the dirty window noise is reduced by the 1:2 quantizer as is described in Doc.#285 . And there is not significant difference even if control methods and applications of the loop filter are changed at the fine chrominance quantizer. It seems that the effect of loop filter and that of quantizing characteristics are independent .

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Conditions of demonstrated pictures are as follows.

(1) Transmission rate

- 320 kbps
- Quantizer is changed in GOB unit to keep the transmission rate.

(2) Coding frame rate

- 15 frames per second (fixed)

(3) Block attribute

- VLC set of Doc.#249 is used in case of d), e),f).
- VLC set of RM3 is used in case of a),b),c).

(4) Processing area of loop filter

- Inside block

(5) MC control of loop filter

- Loop filter is switched on if motion vector is not zero.

(6) Side information control (in case of d),e),f))

- Loop filter is switched on if filtered prediction error is smaller than non-filtered prediction error.