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Title: **Definition of the Quantizer Stepsize**

Source: FRG, F, I, NL, S, UK,

Currently the stepsize of the quantizer is defined by the following formula (Annex 4 to Doc#540):

$$g = 2 \times (1 + QUANT)$$

QUANT is a 5 bit codeword delivering values from 1 to 31. Consequently the stepsize covers the range between 4 and 64.

However, simulations and results from hardware experiments have shown, that a minimum stepsize of 4 is not enough to achieve the high picture quality desirable with a still picture or at higher bitrates. Especially in gray shaded areas of the picture some artifacts like blocking and periodic structures caused by isolated coefficients are visible. To avoid these perturbations a finer stepsize than 4 is necessary.

The simplest solution for getting a finer stepsize is shifting down the range of the stepsize by 2. Thereby the following formula is yielded:

$$g = 2 \times QUANT$$

With it the stepsize 64 is removed and stepsize two is added. The loss of stepsize 64 has no significant influence to the coding because the quantizer so defined by is nearly the same as the quantizer defined by stepsize 62. A direct comparison shows a significant improvement of the picture quality by allowing stepsize 2.