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Specialists Group on Coding for Visual Telephony

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Source: France, FRG, Italy, Netherlands, Sweden, United Kingdom

Title: Two remarks to the text of the flexible hardware specification

Based on the actual specification of the p*64 kbit/s flexible hardware (Annex 4 to Doc. 540R, 'Update from June 16, 1989') a coder and decoder program has been written by one company; the data stream produced by another coder program of another company has been checked with this decoder program and vice versa. The colleagues of the other lab had no other input than the written specification.

We found: the data streams could be decoded; the actual text decribes in a sufficient manner a decoding procedure without contradictions. But some changes in the written text are necessary in order to avoid some misinterpretation. The page numbers used in the following are the numbers of Annex 4 to Doc. 540R.

1. Page 32, 2.1 Data Structure

We propose an additional Note:
Note 4: Unless specified otherwise the leftmost bit is transmitted first

2. Page 44, Quantizers

Not the quantizer, but the dequantizer has to be specified; the threshold used and decision levels are not a matter of standardization. That means only the relationship between transmitted codewords for the level and the representative value of the component must be given, not more.

We propose to skip this appendix and to extend 1.2.5 (Quantisation) on page 31 as follows:

The quantizer stepsize g is given by:

$$g=2*(QUANT+1)$$

where QUANT is the value of the codeword for QUANT1 resp. QUANT2 with values from 1 to 31.

The reconstruction level into the inverse transform is given by:

$$\begin{aligned} Qrec &= LEVEL*g + g/2 && \text{for level} > 0 \\ Qrec &= LEVEL*g - g/2 && \text{for level} < 0 \\ Qrec &= 0 && \text{otherwise} \end{aligned}$$

where LEVEL is the output of the 2d-VLC Decoder