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

Document #291
January 1988

Title: Improved Error Tolerance of Block Address Coding

Source: UK, France, FRG, Netherlands, Italy, Sweden, Norway

The Flexible Hardware Specification has differential addressing of transmitted blocks. Variable length coding of the number of skipped blocks is employed to reduce the addressing overhead.

The effects of transmission errors can be reduced if absolute block addressing is used instead of differential. To illustrate the point, consider the code set currently used which changes to fixed length codes after the first 12 entries in the table. There would be no loss in coding efficiency if Block Address (BA) values greater than 11 were transmitted as absolute addresses. These occasional absolute values prevent that block and subsequent blocks in a Group of Blocks being displaced in the displayed picture and corrupting the prediction of succeeding pictures.

No extra signalling is required. The decoder simply uses a decoded BA value of less than 12 as a difference and adds it to the previously derived absolute block address. A decoded BA value of 12 or more is taken as an absolute address.

This idea is applicable also to differential addressing in a macro-block environment and for m*64kbit/s.

Proposal

Because of the generality of the idea and the fact that the video multiplex is still evolving, a specific proposal with a VLC table is not made here. Instead it is proposed that this idea be considered for incorporation in the final version of the video multiplex in the relevant recommendations.

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