CCITT SG XV
Specialists Group on Coding
for Visual Telephony

Doc. No. 533
June 89

Title: No Stuffing Codewords after the Picture Header
Source: FRG

In the specification of the p x 64kbit/s Flexible Hardware a special stuffing codeword is included. This codeword belongs to the set of codewords for the macro block address and is used for filling up the encoder buffer to prevent its underflowing when no other data is being produced. A decoder has to eliminate this codewords without taking any other action.

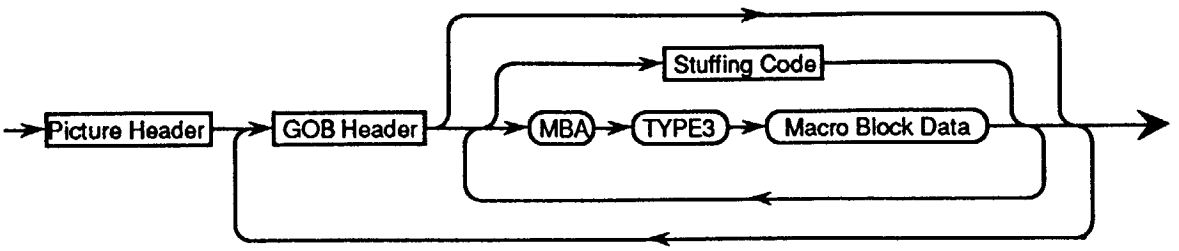
It is defined that the stuffing codeword can be inserted at any position where one of the codes of the macro address code table is expected. The stuffing codeword might occur where a picture start code, a GOB start code or a macro block address is expected.

This means that the decoder for the macro block addresses must be extended. Up to now when searching for the next block address only the occurrence of a start code had to be considered and appropriate actions were provided for this case. Now also stuffing codewords can occur. In this case the block address decoder has to extract the codeword and proceed to the next codeword repeating the address decoding cycle.

There is another position in the video multiplex structure, where a start code is expected but no address decoding cycle takes place. The picture header is immediately followed by the startcode of the first GOB header. Inspite of the definition, a stuffing codeword should never be inserted there. This sequence is highly significant for the beginning of a new picture and can be used by error tolerant decoders for a very safe lock-in procedure.

Since all GOB headers have to be transmitted there is no need at all to insert stuffing codewords between the picture header and the first GOB header. Stuffing codewords can be inserted after the first GOB header even when no other macro block data is present.

Proposal:
It is proposed that stuffing codewords should be inserted in accordance to the syntax diagram below. In particular insertion between picture header and first GOB header is not allowed.



Picture: Insertion of the Stuffing Codeword