

Title: BT Patent Applications

Source: British Telecom

In accordance with the agreement on intellectual property in the Specialists Group, British Telecom discloses that it has made the following four patent applications in addition to the one previously notified in Document #262.

1. Transform coding - 3 August 1987

Transform coding is used for encoding blocks of a video signal which have changed since an earlier field. Higher sequency transform coefficients are omitted. The omitted coefficients are those coefficients which, if the group were arranged, ordered as to horizontal and vertical sequency, in a rectangular matrix with the zero sequency coefficient at one corner representing the origin of x,y coordinates, x representing the position along a row and y the position along a column, would have an x coordinate less than or equal to that of the highest column, and a y coordinate less than or equal to that of the highest row, in respect of which the sum of the absolute values of the coefficients, or of an increasing substantially monotonic function of the absolute values values of the coefficients, in that row or column exceeds a second threshold value which is related to the number of blocks selected in that field; and encoding means for encoding the identified coefficients.

2. Video Multiplex - 23 September 1987

A coder assembles bursts of blocks of image data (eg transform coded coefficients) and associated overhead data into a sequence of data which are then transmitted.

Both the transform coefficients and the overhead data are initially stored in separate FIFO memory stores. The blocks of transform coded coefficients have a 'last coefficient' flag accompanying the last coefficient, and the overhead information contains a unique word SWITCH, after the header information but before the 'end-of-block' flag. The 'last coefficient' flag and the SWITCH word are recognised by a toggle controller which controls the reading of the stores so that the coefficient data and overhead data are selectively passed to a buffer in a desired sequence.

The buffer is followed by a variable length coder which supplies the output of the coder at a constant bit rate. Provision is made to calculate the quantity of data represented at any time by the contents of the buffer and the result is used to control the rate of generation of image data.

3. Motion Estimation - 25 September 1987

A motion vector suitable for motion-compensated prediction in an inter-frame differential video coder is derived by comparison of each block of a current frame with the corresponding region of a previous frame and with shifted regions of the previous frame. Rather than dealing with each block in turn, the apparatus carries out all comparisons involving a line n of the video signal before commencing comparisons involving $n+p$ (where p is the number of lines encompassed by a block).

4. Variable Length Decoding - 26 Feb 1988

The codes are received one bit at a time. A current decoder 'state' (held in a latch) and the input bit are used, via a lookup table, to determine the 'next state' to be entered into the latch. Whenever the received bits form a complete codeword, an output is produced identifying the codeword.