ABSTRACT

CODING IMAGE DATA

A system for encoding video frames in accordance with the MPEG standard, in real-time. Motion vectors are calculated during the forward prediction of B frames and P frames using a telescoping procedure. Similarly, a telescoping procedure is used for calculating motion vectors for B frames during backwards predictive coding. The use of telescoping for the backward predictive coding results in B frames being coded in the wrong order. The correct order for B frames is re-established by writing the frames to a buffer 97 in the order in which they are generated and then reading the frame data from the buffer in the order in which they are required for transmission or recording purposes. The use of the telescoping procedure reduces significantly the amounts of computation required for calculating motion vectors during predictive coding for frames which are displaced by more than one frame period. The use of a buffer to reorganise the frames does not add significantly to the overall hardware requirement because such a buffer would often be used for smoothing out irregular data rates.

Figure 8