IMPROVEMENT FOR SPATIAL WYNER ZIV CODING

Fig. 1

Abstract: A system (100) for encoding an input video frame (1005), for transmitting or storing the encoded video and for decoding the video is disclosed. The system (100) includes an encoder (1000) and a decoder (1200) interconnected through a storage or transmission medium (1100). The encoder (1000) includes a module (1007) for mapping bit representations of component values of pixels of the input video frame (1005) to form mapped bit representations, wherein the Hamming distance of successive values in the mapped bit representations is at least two. The encoder (1000) further includes a turbo encoder (1015) for forming parity bit data from the mapped bit representations into a first data source (1120), and a sampler (1020) for down-sampling the input frame (1005) followed by intraframe compression (1030) to form a second data source (1110). The decoder (1200) receives data from the second data source (1110) to form an estimate for the frame (1005). The decoder (1200) also receives the parity bit data from the first data source (1120), and corrects errors in the estimate by applying the parity bit data to the estimate. Each bit plane is corrected in turn by a turbo decoder (1260). A frame reconstruction module (1290) takes advantage of the Hamming distance of the mapped bit representation to compute final pixel values.