(54) **Video (de)coding device with frequency band retransmission**

(57)   A video-coding device and a video-decoding device, which are capable of assuring the necessary quality of a video sequence even if a transmission error and/or a loss of information occurs in a transmission line and preventing the propagation of decoding error to subsequent images, and can effectively retransmit the necessary coded information when a transmission error and/or a loss of information occurs in a transmission line. A motion-compensated interframe-predicting portion (301) predicts an input image by using a preceding decoded image stored in a frame memory portion (302) and outputs motion vectors. A difference calculating portion (303) determines a difference between the input image signal and the predicted image signal and outputs the difference as a prediction-error signal to a band-dividing portion (304) which in turn divides the prediction-error signal into n hierarchical layers of frequency-band-components and outputs them to respective coding portions (305a to 305n). A loop-back control portion (307) decides whether each of the coded frequency-band-components of the coded prediction-error signal from respective coding portions is input to a synthesizing portion (309) and outputs a decoded prediction-error signal. The predicted image signal and the decoded prediction-error signal are combined to generate a decoded image signal corresponding to the input image. The decoded image signal is used for prediction of a subsequent input image. A motion-compensated interframe-predicting portion (901) predicts an input image by using a preceding decoded image stored in a frame memory portion (902) and outputs motion vectors. A difference calculating portion (903) determines a difference between the input image signal and the predicted image signal and outputs the difference as a prediction-error signal to a band-dividing portion (904) which in turn divides the prediction-error signal into n hierarchical layers of frequency-band-com-

EP 1 599 047 A8

ponents and outputs them to respective coding portions (905a to 905n) for quantizing and encoding the respective components. Buffer portions (906a to 906n) store the coded information and output the information to an external circuit. The buffers output respective frequency-band-components of the coded information according to retransmission request signals from a retransmission control portion (910).

FIG.3