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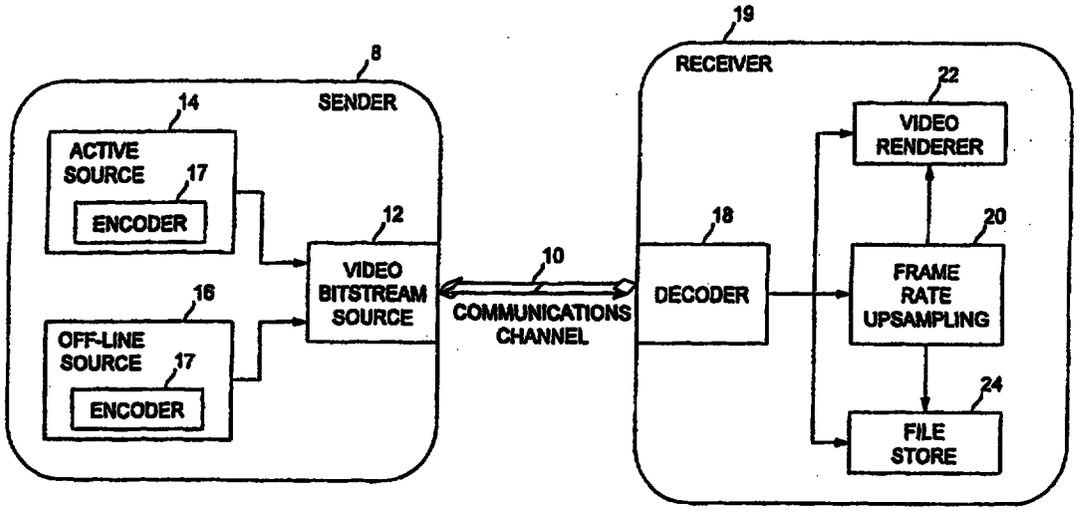
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(54) Title: METHOD AND APPARATUS FOR INCREASING VIDEO FRAME RATE



(57) Abstract

Synthesizing of video frames that have been dropped by a video encoder is achieved by interpolating between decoded frames at a decoder (18). The method consists of successive refinement stages that increase in computational complexity. Starting with a spatio–temporal median filtering approach, each stage uses information that improves the quality of the interpolated frames, such as bit stream motion information (10), decoder based motion estimation and motion–based state segmentation of regions. By using more computational resources, each of these stages results in an improved quality of interpolated video (22). The motion compensation techniques are based on block–based motion estimation of the kind used by block–transform based video encoders. More accurate motion estimates are obtained by using a combination of forward and backward block motion estimation. The method is further extended by incorporating global/local motion estimation based on the segmentation information, and employing image warping techniques to compensate for motion resulting from deformations.