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(54) **VIDEO BIT-RATE REDUCTION SYSTEM AND METHOD UTILIZING A REFERENCE IMAGES MATRIX**

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CPC ***H04N 19/172*** (2014.11); ***H04N 19/105*** (2014.11); ***H04N 19/146*** (2014.11); ***H04N 19/46*** (2014.11); ***H04N 19/53*** (2014.11); ***H04N 19/91*** (2014.11)

(58) **Field of Classification Search**
CPC H04N 19/20; H04N 19/172; H04N 19/46; H04N 19/53
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See application file for complete search history.

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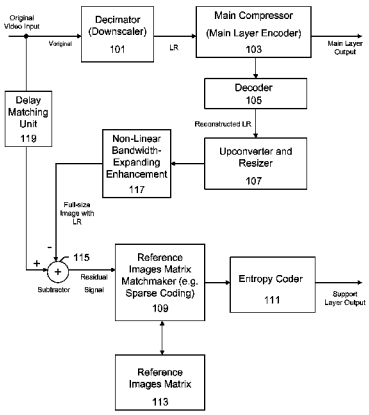
(57) **ABSTRACT**

A video bit-rate reduction system utilizing a reference images matrix and a method of operating the video bit-rate reduction system are disclosed. In one embodiment, the video bit-rate reduction system includes an encoder-side bit-rate reduction system (e.g. a video signal transmitter) with a reference images matrix matchmaker and a decoder-side bit-rate reduction system (e.g. a video signal receiver) with a reference images matrix reconstructor. The video bit-rate reduction system is designed to accommodate a reference images matrix-based symbolization, matchmaking, and reconstruction of residual signals that are processed through a support layer pathway with a high bit-rate reduction and data transmission efficiency, while retaining the high-quality of the video data without any or substantial visible degradation of image and video quality. In a preferred embodiment, a sparse linear model is applied to the reference images matrix matchmaking and the reference images matrix reconstruction for compact symbolization of the residual signals.

20 Claims, 7 Drawing Sheets



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An Encoder-Side System Block Diagram Utilizing a Reference Images Matrix