[CLAIMS]

[Claim 1]

A method of decoding video data, comprising:

deriving a reference picture index and a motion vector of a current prediction unit;

generating a prediction block of the current prediction unit using the reference picture index and the motion vector;

generating a quantized block by inverse-scanning quantized coefficient components;

generating a transformed block by inverse-quantizing the quantized block using a quantization parameter;

generating a residual block by inverse-transforming the transformed block; and

generating a reconstructed pixels using the prediction block and the residual block,

wherein prediction pixels of the prediction block is generated using an interpolation filter selected based on the motion vector.

[Claim 2]

The method of claim 1, wherein the interpolation filter is a 7-tap asymmetry filter or a 6-tap asymmetry filter if the motion vector indicates quarter pixel position.

[Claim 3]

The method of claim 1, wherein the quantization parameter is derived per a quantization unit, and a size of the quantization unit is one of allowable sizes of a coding unit.

[Claim 4]

The method of claim 3, wherein the quantization parameter is derived using a differential quantization parameter and a quantization parameter predictor.

[Claim 5]

The method of claim 4, wherein the quantization parameter predictor is an average of two available quantization parameters if at least two of a left quantization parameter, an above quantization parameter and a previous quantization parameter are available.

[Claim 6]

The method of claim 5, wherein the quantization parameter is an average of the left quantization parameter and the previous quantization parameter if the current coding unit is located at upper boundary of a picture or a slice.

[Claim 7]

The method of claim 1, wherein a number of taps of the filter is determined by the prediction pixel position indicated by the motion vector.

Claims

1. A method of decoding video data in uni-directional prediction, the method comprising:

deriving a reference picture index and a motion vector of a current prediction unit;

generating a prediction block of the current prediction unit using the reference picture index and the motion vector;

generating a quantized block by inverse-scanning quantized coefficient components;

generating a transformed block by inverse-quantizing the quantized block using a quantization parameter;

generating a residual block by inverse-transforming the transformed block; and

generating reconstructed pixels using the prediction block and the residual block,

wherein prediction pixels of the prediction block are generated using an interpolation filter selected based on the motion vector, the interpolation filter being a 7-tap filter if the motion vector indicates quarter pixel position, the interpolation filter being a 8-tap filter if the motion vector indicates half pixel position, and

wherein the quantization parameter is derived using a differential quantization parameter and a quantization parameter predictor, and

if only one of a left quantization parameter and an above quantization parameter is available, the quantization parameter predictor is an average of a previous quantization parameter and the available one of the left quantization parameter and the above quantization parameter.

2. The method of claim 1, wherein the quantization parameter is derived per a quantization unit, and a size of the quantization unit is one of allowable sizes of a coding unit.

3. The method of claim 1, wherein a number of taps of the interpolation filter is determined by the prediction pixel position indicated by the motion vector.

4. The method of claim 1, wherein the reference picture index and the motion vector of the current prediction unit are a reference picture index and a motion vector of a spatial or temporal merge candidate specified by a merge index, and

if the current prediction unit is a second prediction unit partitioned by asymmetric partitioning, the spatial merge candidate corresponding to a first prediction unit partitioned by

the asymmetric partitioning is set as unavailable.

5. The method of claim 4, wherein if the size of the current prediction unit is (3/2)Nx2N, the left spatial merge candidate are set as unavailable.

6. The method of claim 4, wherein a motion vector of the temporal merge candidate is a motion vector of a temporal merge candidate block within a temporal merge candidate picture, and a position of the temporal merge candidate block is determined depending on a position of the current block within a largest coding unit (LCU).

7. The method of claim 1, wherein if both of the left quantization parameter and the above quantization parameter are unavailable, the quantization parameter predictor is set as the previous quantization parameter.