【CLAIMS】

1. A method for generating a residual block, the method comprising:

decoding residual signals to generate quantized coefficient components;

determining an inverse scan pattern and generating a quantized block using the inverse scan pattern;

deriving a quantization parameter and inversely quantizing the quantized block using the quantization parameter to generate a transformed block; and

inversely transforming the transformed block to generate a residual block,

wherein when the quantization parameter is a chroma quantization parameter, the chroma quantization parameter is generated using a luma quantization parameter and an offset parameter indicating a relationship between the luma quantization parameter and the chroma quantization parameter,

the luma quantization parameter is derived using a differential quantization parameter and a quantization parameter predictor, and the differential quantization parameter is generated by entropy decoding,

if two or more quantization parameters are available among a left quantization parameter, an above quantization parameter and a previous quantization parameter of a current coding unit, the quantization parameter predictor is generated using two available quantization parameters,

if only one quantization parameter is available among the left quantization parameter, the above quantization parameter and the previous quantization parameter, the available quantization parameter is set as the quantization parameter predictor, and

wherein when the transformed block is the luma block and the prediction mode is inter prediction, the inverse transform type used for inversely transforming the transformed block is a DCT-based integer transform.

2. The method of claim 1, wherein when the transformed block is a luma block and a prediction mode is an intra prediction, an inverse transform type used for inversely transforming the transformed block is a DST-based integer transform if the size of the transformed block is smaller than 8x8, and the inverse transform type used

for inversely transforming the transformed block is a DCT-based integer transform if the size of the transformed block is not smaller than 8x8.

3. The method of claim 1, wherein when the transformed block is a chroma block, the inverse transform type used for inversely transforming the transformed block is a DCT-based integer transform.

4. The method of claim 1, wherein if the left and above quantization parameters are available, an average of the left and above quantization parameters is set as the quantization parameter predictor.

5. The method of claim 1, wherein when a prediction mode is an intra prediction, the residual signals are luma signals and a size of the quantized block is equal to or smaller than 8x8, the inverse scan pattern is selected among a diagonal scan, a vertical scan and a horizontal scan.

6. The method of claim 1, wherein when a prediction mode is an intra prediction, the residual signals are chroma signals and a size of the quantized block is equal to 4x4, the inverse scan pattern is selected among a diagonal scan, a vertical scan and a horizontal scan.

7. The method of claim 1, wherein when a size of the quantized block is larger than 4x4, plural subsets are generated by applying the inverse scan pattern to significant flags, coefficient signs and coefficient levels, and the quantized block is generated by applying the inverse scan pattern to the plural subset.

8. A method for encoding a residual block, the method comprising:

generating a prediction block using an intra prediction mode or motion information;

generating a residual block by subtracting the prediction block from an original block;

transforming the residual block to generate a transformed block;

quantizing the transformed block using a quantization parameter to generate a quantized block;

determining a scan pattern and applying the scan pattern to the quantized block to generate one-dimensional coefficient information; and

entropy-coding the one-dimensional coefficient information,

wherein the quantization parameter is the luma quantization parameter and a differential quantization parameter is generated by subtracting a quantization parameter predictor from the luma quantization parameter, and the differential quantization parameter is entropy encoded, and an offset parameter is generated and the offset parameter indicates a relationship between the luma quantization parameter and the chroma quantization parameter,

if two or more quantization parameters are available among a left quantization parameter, an above quantization parameter and a previous quantization parameter of a current coding unit, the quantization parameter predictor is generated using two available quantization parameters,

if only one quantization parameter is available among the left quantization parameter, the above quantization parameter and the previous quantization parameter, the available quantization parameter is set as the quantization parameter predictor, and

wherein when the residual block is the luma block and the prediction mode is inter prediction, the transform type used for transforming the residual block is a DCT-based integer transform.

9. A bitstream including encoded image information generated by the method of claim 8.

10. A computer-readable storage medium storing encoded video information, comprising:

a bit stream stored in the medium, the bit stream comprising entropy-encoded information on a differential quantization parameter and a quantized block,

wherein the quantized block is inversely quantized with a quantization parameter to generate a transformed block and the transformed block is inversely transformed to generate a residual block, and a reconstructed block is generated with the residual block and a prediction block,

wherein when the quantization parameter is a chroma quantization parameter, the chroma quantization parameter is generated using a luma quantization parameter and an offset parameter indicating a relationship between the luma quantization parameter and the chroma quantization parameter,

the luma quantization parameter is derived using a differential quantization parameter and a quantization parameter predictor, and the differential quantization parameter is generated by entropy decoding,

if two or more quantization parameters are available among a left quantization parameter, an above quantization parameter and a previous quantization parameter of a current coding unit, the quantization parameter predictor is generated using two available quantization parameters,

if only one quantization parameter is available among the left quantization parameter, the above quantization parameter and the previous quantization parameter, the available quantization parameter is set as the quantization parameter predictor, and

wherein when the transformed block is the luma block and the prediction mode is inter prediction, the inverse transform type used for inversely transforming the transformed block is a DCT-based integer transform.