

WHAT IS CLAIMED IS:

1. An inverse quantizer and inverse transform processor, the processor configured to:
receive a video signal generated from a picture, the picture having been processed at an
encoder by:
 - 5 segmenting the picture into a plurality of blocks;
 obtaining a residual for each block of the plurality of blocks using a
 predictor; applying a transform to each residual to obtain a
 transformed block; determining a spatial activity for each
 transformed block; and
 - 10 determining if each block of the plurality of blocks is assigned to a first
 area of the picture or a second area of the picture by determining
 if a difference between the spatial activity of the block and the
 spatial activity of a neighboring block is larger or smaller than
 a threshold, the blocks in the first area having been assigned by
 - 15 the encoder a first quantization parameter, the blocks in the
 second area having been assigned by the encoder a second
 quantization parameter;
 inverse quantize the blocks of the first area using the first quantization
 parameter; and inverse quantize the blocks of the second area
 - 20 using the second quantization parameter.
2. The processor of claim 1, further configured to:
inverse transform the inverse quantized blocks of the first area, and
inverse transform the inverse quantized blocks of the second area.
3. The processor of claim 1, wherein the transform is a Discrete Cosine Transform.
- 25 4. The processor of claim 2, further comprising: an in-
loop filter; and
a decoded picture buffer.
5. The processor of claim 1, wherein each block of the plurality of blocks is
128x128.
- 30 6. A method, the method comprising:
receiving, using an inverse quantizer and inverse transform processor, a video

- signal generated from a picture, the picture having been processed at an encoder by: segmenting the picture into a plurality of blocks;
obtaining a residual for each block of the plurality of blocks using a predictor;
applying a transform to each residual to obtain a transformed block;
5 determining a spatial activity for each transformed block; and
determining if each block of the plurality of blocks is assigned to a first area of the picture or a second area of the picture by determining if a difference between the spatial activity of the block and the spatial activity of a neighboring block is larger or smaller than a threshold, the
10 blocks in the first area having been assigned by the encoder a first quantization parameter, the blocks in the second area having been assigned by the encoder a second quantization parameter;
inverse quantizing, using the inverse quantizer and inverse transform processor, the blocks of the first area using the first quantization parameter; and
15 inverse quantizing, using the inverse quantizer and inverse transform processor, the blocks of the second area using the second quantization parameter.
7. The method of claim 6, further comprising:
inverse transforming, using the inverse quantizer and inverse transform processor, the
inverse quantized blocks of the first area, and
20 inverse transforming, using the inverse quantizer and inverse transform processor, the inverse quantized blocks of the second area.
8. The method of claim 6, wherein the transform is a Discrete Cosine Transform.
9. The method of claim 7, wherein the inverse quantizer and inverse transform processor comprises an in-loop filter and a decoded picture buffer.
- 25 10. The method of claim 6, wherein each block of the plurality of blocks is 128x128.