WHAT IS CLAIMED IS:

1. An ~~encoder~~inverse quantizer and inverse transform processor, the ~~encoder comprising circuitry~~processor configured to:

receive a video ~~frame;~~signal generated from a picture, the picture having been processed at an encoder by:

~~partition~~segmenting the ~~video frame~~picture into a plurality of blocks; ~~determine a respective spatial activity measure~~obtaining a residual for each block ~~in~~of the plurality of blocks~~; and~~

using a predictor; applying a transform ~~matrix, encode the video frame according~~ to ~~the~~each residual to obtain a transformed block; determining a spatial activity ~~measures~~ for ~~at least one of the plurality of blocks.~~each transformed block; and

~~2. The encoder of claim 1, wherein~~ determining ~~the respective spatial activity measure for~~if each block ~~includes using a generalized discrete cosine transformation matrix.~~

~~3. The encoder of claim 2, wherein the generalized discrete cosine transform matrix includes a generalized discrete cosine transform II matrix.~~

~~4. The encoder of claim 2, wherein the includes an integer approximation of a discrete cosine transform matrix.~~

~~5. The encoder of claim 1, further configured to determine quantization parameters based on each respective spatial activity measure, wherein the encoding uses the determined quantization parameters.~~

~~6. The encoder of claim 1, further configured to determine a first area within the video frame including a first grouping of a subset of the blocks, the first grouping based on the respective spatial activity measure.~~

~~7. The encoder of claim 6, wherein determining the first area includes iterating over each of the~~ of the plurality of blocks ~~and, for each current block, comparing the spatial activity measure of the current block to a spatial activity measure of a preceding block and determining whether a difference~~ is ~~below a predefined threshold, and assigning the current block~~assigned to ~~the~~a first area~~.~~

~~8. The encoder~~ of ~~claim 7, the determining the first area further includes assigning the current block to~~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 ~~response to or based on determining that~~ the ~~difference is above~~first area having been assigned by the ~~predefined threshold.~~

~~9.~~ ~~The~~ encoder ~~of claim 1, wherein~~ a ~~block size of~~first quantization parameter, the blocks ~~is 4 x 4.~~in the second area having been assigned by the encoder a second quantization parameter;

~~10. The encoder of claim 1, further comprising:~~

~~a transform and~~ inverse quantize the blocks of the first area using the first quantization ~~processor;~~

~~an inverse~~ parameter; and inverse quantize the blocks of the second area using the second quantization ~~and inverse transformation processor;~~parameter.

2. ~~an~~ 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.

4. The processor of claim 2, further comprising: an in-loop filter; and

~~a decoder~~decoded picture buffer~~;~~.

~~a motion estimation and compensation~~The processor~~; and~~

5. ~~an intra prediction processor~~ of claim 1, wherein each block of the plurality of blocks is 128x128.

~~11.~~6. A method, the method comprising:

receiving, ~~by an encoder, a video frame;~~

~~partitioning the video frame~~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;

~~determining a respective spatial activity measure~~obtaining a residual for each block ~~in~~of the plurality of blocks ~~and as a function of~~using a predictor; applying a transform ~~matrix; and~~

encoding the video frame according to theeach residual to obtain a transformed block; determining a spatial activity measures for at least oneeach transformed block; and

determining if each block of the plurality of blocks.

12. The method of claim 11, wherein determining the respective 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 measure for each block includes using a generalized discrete cosine transformation matrix.

13. The method of claim 12, wherein the generalized discrete cosine transform matrix includes a generalized discrete cosine transform II matrix.

14. The method of claim 12, wherein the generalized discrete cosine transform matrix includes an integer approximation of a discrete cosine transform matrix.

15. The method of claim 11, further comprising determining neighboring block is larger or smaller than a threshold, the blocks in the first area having been assigned by the encoder a first quantization parameters based on each respective spatial activity measure, wherein the encoding uses the determinedparameter, the blocks in the second area having been assigned by the encoder a second quantization parameters.parameter;

inverse quantizing, using the inverse quantizer and inverse transform processor, the blocks of the first area using the first quantization parameter; and

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

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.

~~16.~~ The method of claim ~~11, further comprising determining a first area within the video frame including a first grouping of a subset of the blocks, the first grouping based on the respective spatial activity measure.~~

~~17.~~10. ~~The method of claim 16~~6, wherein ~~determining the first area includes iterating over~~ each block of the plurality of blocks ~~and, for each current block, comparing the spatial activity measure of the current block to a spatial activity measure of a preceding block and determining whether a difference is below a predefined threshold, and assigning the current block to the first area~~is 128x128.

~~18. The method of claim 17, the determining the first area further includes assigning the current block to a second area in response to or based on determining that the difference is above the predefined threshold.~~

~~19. The method of claim 11, wherein a block size of the plurality of blocks is 4 x 4.~~

~~20. The method of claim 11, the encoder comprising circuitry comprising:~~

~~a transform and quantization processor;~~

~~an inverse quantization and inverse transformation processor;~~

~~an in-loop filter;~~

~~a decoder picture buffer;~~

~~a motion estimation and compensation processor; and~~

~~an intra prediction processor.~~