WHAT IS CLAIMED IS:

1. A decoder, the decoder comprising circuitry configured to:

receive a bitstream comprising a coded current picture including a coded 128x128 coding tree unit, and signaling information, the signaling information including a sequence parameter set containing a flag indicating that geometric partitioning is enabled for the bitstream, first geometric partition index information enabling the decoder to determine for a first straight line partition boundary in the coding tree unit a first endpoint on a boundary of the coding tree unit and a second endpoint on the boundary of the coding tree unit, second geometric partition index information enabling the decoder to determine for a second straight line partition boundary in the coding tree unit a first endpoint on the boundary of the coding tree unit and a second endpoint on the first straight line partition boundary; and

~~determine a first region, a second region, and a third region of a current block according to a geometric partitioning mode; and~~

decode the coded 128x128 coding tree unit using the first geometric partition index information and second geometric partition index information to reconstruct the coding tree unit, the reconstructed coding tree unit being partitioned into three non-rectangular regions by the first and second straight line partition boundaries~~current block using an inverse discrete cosine transformation for each of the first region, the second region, and the third region~~.

~~2. The decoder of claim 1, wherein the current block has a size of 128 x 128 or 64 x 64.~~

~~3. The decoder of claim 1, wherein a number of coefficients for inverse transformation of the first region, the second region, and/or the third is signaled in the bitstream.~~

~~4. The decoder of claim 1, further configured to:~~

~~determine whether the geometric partitioning mode is enabled;~~

~~determine a first line segment for the current block; and~~

~~determine a second line segment for the current block;~~

~~wherein:~~

~~the decoding of the current block includes reconstructing pixel data using the first line segment and the second line segment; and~~

~~the first line segment and the second line segment partition the current block into the first region, the second region, and the third region.~~

~~5. The decoder of claim 4, wherein the first line segment characterizes the first region and the second line segment characterizes the second region and the third region.~~

~~6. The decoder of claim 4, wherein reconstructing pixel data includes computing a predictor for the first region using an associated motion vector contained in the bitstream.~~

~~7.~~2. The decoder of claim 1, further comprising:

an entropy decoder processor configured to receive the bitstream and decode the bitstream into quantized coefficients;

an inverse quantization and inverse transformation processor configured to process the quantized coefficients including performing an inverse discrete cosine according to the determined coding transformation type;

a deblocking filter;

a frame buffer; and

an intra prediction processor.

~~8. The decoder of claim 1, wherein the bitstream includes a parameter indicating whether geometric partitioning mode is enabled for the current block.~~

~~9. The decoder of claim 1, wherein the current block forms part of a quadtree plus binary decision tree.~~

~~10. The decoder of claim 1, wherein the current block is a non-leaf node of the quadtree plus binary decision tree.~~

~~11. The decoder of claim 1, wherein the current block is a coding tree unit or a coding unit.~~

~~12. The decoder of claim 1, wherein the first region is a coding unit or a prediction unit.~~

~~13. A decoder, the decoder comprising circuitry configured to:~~

~~receive a bitstream;~~

~~determine a first region, a second region, and a third region of a current block and according to a geometric partitioning mode;~~

~~determine, from a signal contained in the bitstream, a coding transformation type to decode each of the first region, the second region, and/or the third region, the coding transformation type characterizing at least an inverse block discrete cosine transformation and an inverse shape adaptive discrete cosine transformation; and~~

decode the current block, the decoding of the current block including using the determined transformation type for inverse transformation for each of the first region, the second region and/or the third region.

14. The decoder of claim 13, wherein the current block has a size of 128 x 128 or 64 x 64.

15. The decoder of claim 13, wherein a number of coefficients for inverse transformation of the first region, the second region, and/or the third is signaled in the bitstream.

16. The decoder of claim 13, further configured to:

determine whether the geometric partitioning mode is enabled;

determine a first line segment for the current block; and

determine a second line segment for the current block;

wherein:

the decoding of the current block includes reconstructing pixel data using the first line segment and the second line segment; and

the first line segment and the second line segment partition the current block into the first region, the second region, and the third region.

17. The decoder of claim 16, wherein the first line segment characterizes the first region and the second line segment characterizes the second region and the third region.

18. The decoder of claim 16, wherein reconstructing pixel data includes computing a predictor for the first region using an associated motion vector contained in the bitstream.

19. The decoder of claim 13, further comprising:

an entropy decoder processor configured to receive the bitstream and decode the bitstream into quantized coefficients;

an inverse quantization and inverse transformation processor configured to process the quantized coefficients including performing an inverse discrete cosine according to the determined coding transformation type;

a deblocking filter;

a frame buffer; and

an intra prediction processor.

20. The decoder of claim 13, wherein the bitstream includes a parameter indicating whether geometric partitioning mode is enabled for the current block.

~~21. The decoder of claim 13, wherein the current block forms part of a quadtree plus binary decision tree.~~

~~22. The decoder of claim 13, wherein the current block is a non-leaf node of the quadtree plus binary decision tree.~~

~~23. The decoder of claim 13, wherein the current block is a coding tree unit or a coding unit.~~

~~24. The decoder of claim 13, wherein the first region is a coding unit or a prediction unit.~~

~~25.~~3. A method comprising:

receiving, by a decoder, a bitstream comprising a coded current picture including a coded 128x128 coding tree unit, and signaling information, the signaling information including a sequence parameter set containing a flag indicating that geometric partitioning is enabled for the bitstream, first geometric partition index information enabling the decoder to determine for a first straight line partition boundary in the coding tree unit a first endpoint on a boundary of the coding tree unit and a second endpoint on the boundary of the coding tree unit, second geometric partition index information enabling the decoder to determine for a second straight line partition boundary in the coding tree unit a first endpoint on the boundary of the coding tree unit and a second endpoint on the first straight line partition boundary; and

~~determining a first region, a second region, and a third region of a current block and according to a geometric partitioning mode;~~

~~determining, from a signal contained in the bitstream, a coding transformation type to decode the first region, the second region, and/or the third region, the coding transformation type characterizing at least an inverse block discrete cosine transformation or an inverse shape adaptive discrete cosine transformation; and~~

decoding the current coded 128x128 coding tree unit using the first geometric partition index information and second geometric partition index information to reconstruct the coding tree unit, the reconstructed coding tree unit being partitioned into three non-rectangular regions by the first and second straight line partition boundaries~~block, the decoding of the current block including using the determined transformation type for inverse transformation for each of the first region, the second region, and/or the third region~~.

~~26. The method of claim 25, wherein the current block has a size of 128 x 128 or 64 x 64.~~

~~27. The method of claim 25, wherein a number of coefficients for inverse transformation of the first region, the second region, and/or the third is signaled in the bitstream.~~

28. The method of claim 25, further comprising:

determining, by the decoder, whether the geometric partitioning mode is enabled;

determining, by the decoder, a first line segment for the current block; and

determining, by the decoder, a second line segment for the current block;

wherein:

the decoding of the current block includes reconstructing pixel data using the first line segment and the second line segment; and

the first line segment and the second line segment partition the current block into the first region, the second region, and the third region.

29. The method of claim 28, wherein the first line segment characterizes the first region and the second line segment characterizes the second region and the third region.

30. The method of claim 28, wherein reconstructing pixel data includes computing a predictor for the first region using an associated motion vector contained in the bitstream.

31. The method of claim 25, wherein the decoder comprises:

an entropy decoder processor configured to receive the bitstream and decode the bitstream into quantized coefficients;

an inverse quantization and inverse transformation processor configured to process the quantized coefficients including performing an inverse discrete cosine according to the determined coding transformation type;

a deblocking filter;

a frame buffer; and

an intra prediction processor.

32. The method of claim 25, wherein the bitstream includes a parameter indicating whether block level geometric partitioning mode is enabled for the block.

33. The method of claim 25, wherein the current block forms part of a quadtree plus binary decision tree.

34. The method of claim 25, wherein the current block is a non-leaf node of the quadtree plus binary decision tree.

35. The method of claim 25, wherein the current block is a coding tree unit or a coding unit.

36. The method of claim 25, wherein the first region is a coding unit or a prediction unit.