

CLAIMS

1. A video decoding method, comprising:

acquiring a coding block of a video image frame;

determining a partitioning mode available to the coding block according to a size of the coding block and an allowable maximum sub-block size ratio when determining that sub-block transform (SBT) is desired to be performed on the coding block;

determining, based on the partitioning mode available to the coding block, a target partitioning mode used during the SBT performed on the coding block; and

partitioning the coding block based on the target partitioning mode, and decoding a plurality of sub-blocks obtained through the partitioning,

wherein determining a partitioning mode available to the coding block comprises at least one of:

allowing a vertical half partitioning mode for the coding block when determining that a width of the coding block is greater than or equal to 8 and twice a height of the coding block is less than or equal to a product of the width and the maximum sub-block size ratio, or otherwise prohibiting the vertical half partitioning mode for the coding block;

allowing a vertical quad partitioning mode for the coding block when determining that a width of the coding block is greater than or equal to 16 and 4 times a height of the coding block is less than or equal to a product of the width and the maximum sub-block size ratio, or otherwise prohibiting the vertical quad partitioning mode for the coding block;

allowing a horizontal half partitioning mode for the coding block when determining that a height of the coding block is greater than or equal to 8 and twice a width of the coding block is less than or equal to a product of the height and the maximum sub-block size ratio, or otherwise prohibiting the horizontal half partitioning mode for the coding block; or

allowing a horizontal quad partitioning mode for the coding block when determining that a height of the coding block is greater than or equal to 16 and 4 times a width of the coding block is less than or equal to a product of the height and the

maximum sub-block size ratio, or otherwise prohibiting the horizontal quad partitioning mode for the coding block.

2. The video decoding method according to claim 1, wherein when the vertical half partitioning mode or the vertical quad partitioning mode is allowed, the maximum sub-block size ratio is a maximum sub-block height-width ratio.

3. The video decoding method according to claim 1, wherein when the horizontal half partitioning mode or the horizontal quad partitioning mode is allowed, the maximum sub-block size ratio is a maximum sub-block width-height ratio.

4. The video decoding method according to claim 1, wherein the maximum sub-block size ratio includes a maximum width-height ratio and a maximum height-width ratio, a value of the maximum width-height ratio being equal to a value of the maximum height-width ratio; and the method further comprises:

decoding a value of the maximum sub-block size ratio from a sequence header of the video image frame.

5. The video decoding method according to claim 1, wherein the maximum sub-block size ratio includes a maximum width-height ratio and a maximum height-width ratio, a value of the maximum width-height ratio being not equal to a value of the maximum height-width ratio; and the method further comprises:

decoding the value of the maximum width-height ratio and the value of the maximum height-width ratio from a sequence header of the video image frame.

6. The video decoding method according to claim 1, wherein a value of the maximum sub-block size ratio is the same as a value of an allowable maximum coding block size ratio.

7. The video decoding method according to claim 1, further comprising:
performing a transform skip operation or an inverse transform operation.

8. A video decoding apparatus, comprising:

a memory storing computer program instructions; and a processor coupled to the memory and configured to execute the computer program instructions and perform:

acquiring a coding block of a video image frame;

determining a partitioning mode available to the coding block according to a size of the coding block and an allowable maximum sub-block size ratio when determining that sub-

block transform (SBT) is to be performed on the coding block;

determining, based on the partitioning mode available to the coding block, a target partitioning mode used during the SBT performed on the coding block; and

partitioning the coding block based on the target partitioning mode, and decoding a plurality of sub-blocks obtained through the partitioning;

wherein determining a partitioning mode available to the coding block comprises at least one of:

allowing a vertical half partitioning mode for the coding block when determining that a width of the coding block is greater than or equal to 8 and twice a height of the coding block is less than or equal to a product of the width and the maximum sub-block size ratio, or otherwise prohibiting the vertical half partitioning mode for the coding block;

allowing a vertical quad partitioning mode for the coding block when determining that a width of the coding block is greater than or equal to 16 and 4 times a height of the coding block is less than or equal to a product of the width and the maximum sub-block size ratio, or otherwise prohibiting the vertical quad partitioning mode for the coding block;

allowing a horizontal half partitioning mode for the coding block when determining that a height of the coding block is greater than or equal to 8 and twice a width of the coding block is less than or equal to a product of the height and the maximum sub-block size ratio, or otherwise prohibiting the horizontal half partitioning mode for the coding block; or

allowing a horizontal quad partitioning mode for the coding block when determining that a height of the coding block is greater than or equal to 16 and 4 times a width of the coding block is less than or equal to a product of the height and the maximum sub-block size ratio, or otherwise prohibiting the horizontal quad partitioning mode for the coding block.

9. An electronic device, comprising:

one or more processors; and

a storage apparatus, configured to store one or more programs, the one or more programs, when executed by the one or more processors, causing the one or more processors

to implement the method according to any one of claims 1 to 7.

10. A computer-readable medium, storing a computer program, the computer program, when executed by a processor, implementing the method according to any one of claims 1 to 7.