

WHAT IS CLAIMED IS:

1. A decoding method, comprising:

when characteristic information of a current block satisfies specific conditions, performing the following steps:

obtaining first target motion information and second target motion information of the current block, wherein the first target motion information is different from the second target motion information; and

performing a decoding process on the current block based on the first target motion information and the second target motion information;

wherein the characteristic information at least comprises a type of a current slice where the current block is located, a motion information mode of the current block, and size information of the current block;

wherein the performing a decoding process on the current block based on the first target motion information and the second target motion information, comprises: performing motion compensation on the current block based on the first target motion information and the second target motion information to obtain a prediction value of the current block;

wherein the prediction value of the current block at least comprises a prediction value of a first sub-block area, a prediction value of a second sub-block area, and a prediction value of a third sub-block area;

wherein the prediction value of the first sub-block area is obtained by performing motion compensation on the first sub-block area based on the first target motion information, the prediction value of the second sub-block area is obtained by performing motion compensation on the second sub-block area based on the second target motion information, and the prediction value of the third sub-block area is obtained by performing weighted

compensation on the third sub-block area based on the first target motion information and the second target motion information; and

wherein the prediction value of the third sub-block area comprises prediction values of all sub-blocks in the third sub-block area, and each sub-block in the third sub-block area is a 1*1 pixel block,

obtaining the prediction value of the third sub-block area by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information, comprises:

for each sub-block in the third sub-block area,

determining a first prediction value of the sub-block based on the first target motion information;

determining a second prediction value of the sub-block based on the second target motion information; and

obtaining a weighted prediction value of the sub-block based on the first prediction value, a first weight coefficient corresponding to the first prediction value, the second prediction value, and a second weight coefficient corresponding to the second prediction value,

wherein the weighted prediction value of the sub-block is $P1*a + P2*b$ when the first prediction value is $P1$, the second prediction value is $P2$, the first weight coefficient is a , and the second weight coefficient is b ;

wherein a set of values of the first weight coefficient for a luma component of each sub-block in the third sub-block area is only $\{7/8, 6/8, 5/8, 4/8, 3/8, 2/8, 1/8\}$.

2. The decoding method according to claim 1, wherein the first target motion information and the second target motion information are respectively motion information of a first triangular sub-block and a second triangular sub-block obtained by partitioning the current block,

when the characteristic information of the current block satisfies the specific conditions, the executed steps further comprise:

partitioning the current block into the first triangular sub-block and the second triangular sub-block based on a partition method indicated by indication information.

3. The decoding method according to claim 2, wherein the partitioning the current block into a first triangular sub-block and a second triangular sub-block based on a partition method indicated by indication information, comprises:

partitioning the current block into the first triangle sub-block and the second triangle sub-block with a first diagonal method when the partition method indicated by the indication information specifies that the current block is allowed to be partitioned with the first diagonal method; or

partitioning the current block into the first triangle sub-block and the second triangle sub-block with a second diagonal method when the partition method indicated by the indication information specifies that the current block is allowed to be partitioned with the second diagonal method.

4. The decoding method according to claim 1, wherein each sub-block in the third sub-block area comprises a luma component,

for the luma component,

the first prediction value is a prediction value of the luma component determined based on the first target motion information,

the second prediction value is a prediction value of the luma component determined based on the second target motion information, and

the weighted prediction value of the sub-block is a weighted prediction value of the luma component.

5. The decoding method according to claim 1, wherein each sub-block in the third sub-block area comprises a chroma component,

for the chroma component,

the first prediction value is a prediction value of the chroma component determined based on the first target motion information,

the second prediction value is a prediction value of the chroma component determined based on the second target motion information, and

the weighted prediction value of the sub-block is a weighted prediction value of the chroma component which is determined based on the first prediction value, the second prediction value, the first weight coefficient, and the second weight coefficient.

6. The decoding method according to claim 2, wherein for each sub-block in the third sub-block area,

when the sub-block is located in the first triangular sub-block, the first weight coefficient is larger than the second weight coefficient;

when the sub-block is located in the second triangular sub-block, the first weight coefficient is smaller than the second weight coefficient;

when the sub-block is located across a partition line, the first weight coefficient is equal to the second weight coefficient.

7. The decoding method according to claim 3, wherein determining the partition method to be the first diagonal method based on the indication information, comprises:

obtaining first indication information configured to indicate that the current block is allowed to be partitioned with the first diagonal method;

determining, based on the first indication information, that the partition method is the first diagonal method; and

determining the partition method to be the second diagonal method based on the indication information, comprises:

obtaining second indication information configured to indicate that the current block is allowed to be partitioned with the second diagonal method;

determining, based on the second indication information, that the partition method is the second diagonal method.

8. The decoding method according to claim 2, wherein the partitioning the current block into a first triangular sub-block and a second triangular sub-block, comprises:

when the indication information is first indication information,

partitioning the current block into the first triangular sub-block and the second triangular sub-block based on 45° partition, wherein the first indication information is configured to indicate that the partition method for partitioning the current block is the 45° partition; or

when the indication information is second indication information,

partitioning the current block into the first triangular sub-block and the second triangular sub-block based on 135° partition, wherein the second indication information is configured to indicate that the partition method for partitioning the current block is the 135° partition;

wherein the 45° partition comprises a first diagonal method, and the 135° partition comprises a second diagonal method;

the partitioning the current block into the first triangular sub-block and the second triangular sub-block based on the 45° partition, comprises:

partitioning the current block into the first triangular sub-block and the second triangular sub-block with the first diagonal method; and

the partitioning the current block into the first triangular sub-block and the second triangular sub-block based on the 135° partition, comprises:

partitioning the current block into the first triangular sub-block and the second triangular sub-block with the second diagonal method.

9. The decoding method according to claim 1, further comprising:

for the current block, storing motion information in a unit of 4×4 block;

wherein for the first sub-block area, if MV1 is selected as the first target motion information, storing the MV1 for the first sub-block area, wherein the MV1 is from a unidirectional prediction block and a candidate list of the current block comprises the MV1;

for the second sub-block area, if MV2 is selected as the second target motion information, storing the MV2 for the second sub-block area, wherein the MV2 is from a unidirectional prediction block and the candidate list comprises the MV2.

10. The decoding method according to claim 1, wherein the obtaining first target motion information and second target motion information of the current block, comprises:

constructing a candidate list which comprises a plurality of candidate motion information;

selecting one candidate motion information from the candidate list as the first target motion information; and

selecting another candidate motion information from the candidate list as the second target motion information;

or

constructing a candidate list which comprises a plurality of candidate motion information;

selecting, according to an index value indicated by third indication information, candidate motion information corresponding to the index value from the candidate list, and using the selected candidate motion information as the first target motion information; and

selecting, according to an index value indicated by fourth indication information, candidate motion information corresponding to the index value from the candidate list, and using the selected candidate motion information as the second target motion information.

11. An encoding method, comprising:

when characteristic information of a current block satisfies specific conditions, performing the following steps:

obtaining first target motion information and second target motion information of the current block, wherein the first target motion information is different from the second target motion information; and

performing an encoding process on the current block based on the first target motion information and the second target motion information;

wherein the characteristic information at least comprises a type of a current slice where the current block is located, a motion information mode of the current block, and size information of the current block;

wherein the performing an encoding process on the current block based on the first target motion information and the second target motion information, comprises: performing motion compensation on the current block based on the first target motion information and the second target motion information to obtain a prediction value of the current block;

wherein the prediction value of the current block at least comprises a prediction value of a first sub-block area, a prediction value of a second sub-block area, and a prediction value of a third sub-block area;

wherein the prediction value of the first sub-block area is obtained by performing motion compensation on the first sub-block area based on the first target motion information, the prediction value of the second sub-block area is obtained by performing motion compensation on the second sub-block area based on the second target motion information, and the prediction value of the third sub-block area is obtained by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information; and

wherein the prediction value of the third sub-block area comprises prediction values of all sub-blocks in the third sub-block area, and each sub-block in the third sub-block area is a 1*1 pixel block,

obtaining the prediction value of the third sub-block area by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information, comprises:

for each sub-block in the third sub-block area,

determining a first prediction value of the sub-block based on the first target motion information;

determining a second prediction value of the sub-block based on the second target motion information; and

obtaining a weighted prediction value of the sub-block based on the first prediction value, a first weight coefficient corresponding to the first prediction value, the second prediction value, and a second weight coefficient corresponding to the second prediction value,

wherein the weighted prediction value of the sub-block is $P1 \cdot a + P2 \cdot b$ when the first prediction value is $P1$, the second prediction value is $P2$, the first weight coefficient is a , and the second weight coefficient is b ;

wherein a set of values of the first weight coefficient for a luma component of each sub-block in the third sub-block area is only $\{7/8, 6/8, 5/8, 4/8, 3/8, 2/8, 1/8\}$.

12. The encoding method according to claim 11, wherein the first target motion information and the second target motion information are respectively motion information of a first triangular sub-block and a second triangular sub-block obtained by partitioning the current block;

when the characteristic information of the current block satisfies the specific conditions, the executed steps further comprise:

encoding indication information configured to indicate a partition method of the current block, wherein the partition method indicated by the indication information is configured to

partition the current block into the first triangular sub-block and the second triangular sub-block.

13. The encoding method according to claim 12, wherein the partition method indicated by the indication information is used to partition the current block into the first triangular sub-block and the second triangular sub-block, comprises:

when the indication information specifies that the current block is allowed to be partitioned with a first diagonal method,

the indication information is configured to specify partitioning the current block into the first triangle sub-block and the second triangle sub-block with the first diagonal method;
or

when the indication information specifies that the current block is allowed to be partitioned with a second diagonal method,

the indication information is configured to indicate partitioning the current block into the first triangle sub-block and the second triangle sub-block with the second diagonal method.

14. A decoding device, comprising:

a processor and a machine-readable storage medium, wherein the machine-readable storage medium stores machine-executable instructions that are invoked by the processor;
when the processor invokes the instructions, the processor is configured to:

when characteristic information of a current block satisfies specific conditions, perform the following steps:

obtaining first target motion information and second target motion information of the current block, wherein the first target motion information is different from the second target motion information; and

performing a decoding process on the current block based on the first target motion information and the second target motion information;

wherein the characteristic information at least comprises a type of a current slice where the current block is located, a motion information mode of the current block, and size information of the current block;

wherein the performing a decoding process on the current block based on the first target motion information and the second target motion information, comprises: performing motion compensation on the current block based on the first target motion information and the second target motion information to obtain a prediction value of the current block;

wherein the prediction value of the current block at least comprises a prediction value of a first sub-block area, a prediction value of a second sub-block area, and a prediction value of a third sub-block area;

wherein the prediction value of the first sub-block area is obtained by performing motion compensation on the first sub-block area based on the first target motion information, the prediction value of the second sub-block area is obtained by performing motion compensation on the second sub-block area based on the second target motion information, and the prediction value of the third sub-block area is obtained by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information; and

wherein the prediction value of the third sub-block area comprises prediction values of all sub-blocks in the third sub-block area, and each sub-block in the third sub-block area is a 1*1 pixel block,

obtaining the prediction value of the third sub-block area by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information, comprises:

for each sub-block in the third sub-block area,

determining a first prediction value of the sub-block based on the first target motion information;

determining a second prediction value of the sub-block based on the second target motion information; and

obtaining a weighted prediction value of the sub-block based on the first prediction value, a first weight coefficient corresponding to the first prediction value, the second prediction value, and a second weight coefficient corresponding to the second prediction value,

wherein the weighted prediction value of the sub-block is $P1*a + P2*b$ when the first prediction value is $P1$, the second prediction value is $P2$, the first weight coefficient is a , and the second weight coefficient is b ;

wherein a set of values of the first weight coefficient for a luma component of each sub-block in the third sub-block area is only $\{7/8, 6/8, 5/8, 4/8, 3/8, 2/8, 1/8\}$.

15. An encoding device, comprising:

a processor and a machine-readable storage medium, wherein the machine-readable storage medium stores machine-executable instructions that are invoked by the processor; when the processor invokes the instructions, the processor is configured to:

when characteristic information of a current block satisfies specific conditions, perform the following steps:

obtaining first target motion information and second target motion information of the current block, wherein the first target motion information is different from the second target motion information; and

performing an encoding process on the current block based on the first target motion information and the second target motion information;

wherein the characteristic information at least comprises a type of a current slice where the current block is located, a motion information mode of the current block, and size information of the current block;

wherein the performing an encoding process on the current block based on the first target motion information and the second target motion information, comprises: performing motion compensation on the current block based on the first target motion information and the second target motion information to obtain a prediction value of the current block;

wherein the prediction value of the current block at least comprises a prediction value of a first sub-block area, a prediction value of a second sub-block area, and a prediction value of a third sub-block area;

wherein the prediction value of the first sub-block area is obtained by performing motion compensation on the first sub-block area based on the first target motion information, the prediction value of the second sub-block area is obtained by performing motion compensation on the second sub-block area based on the second target motion information, and the prediction value of the third sub-block area is obtained by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information; and

wherein the prediction value of the third sub-block area comprises prediction values of all sub-blocks in the third sub-block area, and each sub-block in the third sub-block area is a 1*1 pixel block,

obtaining the prediction value of the third sub-block area by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information, comprises:

for each sub-block in the third sub-block area,

determining a first prediction value of the sub-block based on the first target motion information;

determining a second prediction value of the sub-block based on the second target motion information; and

obtaining a weighted prediction value of the sub-block based on the first prediction value, a first weight coefficient corresponding to the first prediction value, the second prediction value, and a second weight coefficient corresponding to the second prediction value,

wherein the weighted prediction value of the sub-block is $P1*a + P2*b$ when the first prediction value is $P1$, the second prediction value is $P2$, the first weight coefficient is a , and the second weight coefficient is b ;

wherein a set of values of the first weight coefficient for a luma component of each sub-block in the third sub-block area is only $\{7/8, 6/8, 5/8, 4/8, 3/8, 2/8, 1/8\}$.

16. A decoder, configured to:

when characteristic information of a current block satisfies specific conditions, perform the following steps:

obtaining first target motion information and second target motion information of the current block, wherein the first target motion information is different from the second target motion information; and

performing a decoding process on the current block based on the first target motion information and the second target motion information;

wherein the characteristic information at least comprises a type of a current slice where the current block is located, a motion information mode of the current block, and size information of the current block;

wherein the performing a decoding process on the current block based on the first target motion information and the second target motion information, comprises: performing motion compensation on the current block based on the first target motion information and the second target motion information to obtain a prediction value of the current block;

wherein the prediction value of the current block at least comprises a prediction value of a first sub-block area, a prediction value of a second sub-block area, and a prediction value of a third sub-block area;

wherein the prediction value of the first sub-block area is obtained by performing motion compensation on the first sub-block area based on the first target motion information, the prediction value of the second sub-block area is obtained by performing motion compensation on the second sub-block area based on the second target motion information, and the prediction value of the third sub-block area is obtained by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information; and

wherein the prediction value of the third sub-block area comprises prediction values of all sub-blocks in the third sub-block area, and each sub-block in the third sub-block area is a 1*1 pixel block,

obtaining the prediction value of the third sub-block area by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information, comprises:

for each sub-block in the third sub-block area,

determining a first prediction value of the sub-block based on the first target motion information;

determining a second prediction value of the sub-block based on the second target motion information; and

obtaining a weighted prediction value of the sub-block based on the first prediction value, a first weight coefficient corresponding to the first prediction value, the second prediction value, and a second weight coefficient corresponding to the second prediction value,

wherein the weighted prediction value of the sub-block is $P1*a + P2*b$ when the first prediction value is P1, the second prediction value is P2, the first weight coefficient is a, and the second weight coefficient is b;

wherein a set of values of the first weight coefficient for a luma component of each sub-block in the third sub-block area is only $\{7/8, 6/8, 5/8, 4/8, 3/8, 2/8, 1/8\}$.

17. An encoder, configured to:

when characteristic information of a current block satisfies specific conditions, perform the following steps:

obtaining first target motion information and second target motion information of the current block, wherein the first target motion information is different from the second target motion information; and

performing an encoding process on the current block based on the first target motion information and the second target motion information;

wherein the characteristic information at least comprises a type of a current slice where the current block is located, a motion information mode of the current block, and size information of the current block;

wherein the performing an encoding process on the current block based on the first target motion information and the second target motion information, comprises: performing motion compensation on the current block based on the first target motion information and the second target motion information to obtain a prediction value of the current block;

wherein the prediction value of the current block at least comprises a prediction value of a first sub-block area, a prediction value of a second sub-block area, and a prediction value of a third sub-block area;

wherein the prediction value of the first sub-block area is obtained by performing motion compensation on the first sub-block area based on the first target motion information, the prediction value of the second sub-block area is obtained by performing motion compensation on the second sub-block area based on the second target motion information, and the prediction value of the third sub-block area is obtained by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information; and

wherein the prediction value of the third sub-block area comprises prediction values of all sub-blocks in the third sub-block area, and each sub-block in the third sub-block area is a 1*1 pixel block,

obtaining the prediction value of the third sub-block area by performing weighted compensation on the third sub-block area based on the first target motion information and the second target motion information, comprises:

for each sub-block in the third sub-block area,

determining a first prediction value of the sub-block based on the first target motion information;

determining a second prediction value of the sub-block based on the second target motion information; and

obtaining a weighted prediction value of the sub-block based on the first prediction value, a first weight coefficient corresponding to the first prediction value, the second prediction value, and a second weight coefficient corresponding to the second prediction value,

wherein the weighted prediction value of the sub-block is $P1*a + P2*b$ when the first prediction value is $P1$, the second prediction value is $P2$, the first weight coefficient is a , and the second weight coefficient is b ;

wherein a set of values of the first weight coefficient for a luma component of each sub-block in the third sub-block area is only $\{7/8, 6/8, 5/8, 4/8, 3/8, 2/8, 1/8\}$.

18. A machine-readable storage medium having machine-executable instructions stored thereon, wherein the instructions are invoked by a processor to perform the method according to any one of claims 1-13.