[Claims]

1. An apparatus for video decoding, the apparatus comprising:

a processor configured to obtain, from a bitstream, collocated picture list information, which indicates whether a collocated picture is determined according to a list L**0** of a current block between the list L**0** and a list L**1** of the current block,

determine a collocated block in the collocated picture determined using the collocated picture list information,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, determine a motion vector between a L**0** motion vector and a L**1** motion vector of a collocated block according to the list L**0** or the list L**1** of the current block,

determine a motion vector predictor candidate according to the collocated block by using the determined motion vector, and

obtain a motion vector predictor of the current block among predictor candidates including the motion vector predictor candidate according to the collocated block.

2. A method of video encoding, the method comprising:

generating collocated picture list information, which indicates whether a collocated picture of a current block is determined according to a list L**0** of the current block between the list L**0** and a list L**1** of the current block; and

generating motion information of the current block based on a motion vector predictor of the current block according to the collocated block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is determined between a L**0** motion vector and a L**1** motion vector of a collocated block according to the list L**0** or the list L**1** of the current block,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

3. An apparatus for video encoding, the apparatus comprising at least one processor configured to:

generate collocated picture list information, which indicates whether a collocated picture of a current block is determined according to a list L**0** of the current block between the list L**0** and a list L**1** of the current block; and

generate motion information of the current block based on a motion vector predictor of the current block according to the collocated block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is determined between a L**0** motion vector and a L**1** motion vector of a collocated block according to the list L**0** or the list L**1** of the current block,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

4. A method of video encoding, the method comprising:

generating collocated picture list information, which indicates whether a collocated picture of a current block is determined according to a list L**0** of the current block between the list L**0** and a list L**1** of the current block; and

generating motion information of the current block based on a motion vector predictor of the current block according to the collocated block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion

vector is selected between a L0 motion vector and a L1 motion vector of a collocated block according to the list L0 or the list L1 of the current block,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture is determined according to the list L0 of the current block, the L1 motion vector of the collocated block is selected,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture list information indicates the list L1 of the current block, the L0 motion vector of the collocated block is selected,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

5. An apparatus for video encoding, the apparatus comprising at least one processor configured to:

generate collocated picture list information, which indicates whether a collocated picture of a current block is determined according to a list L0 of the current block between the list L0 and a list L1 of the current block; and

generate motion information of the current block based on a motion vector predictor of the current block according to the collocated block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is selected between a L0 motion vector and a L1 motion vector of a collocated block according to the list L0 or the list L1 of the current block,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture is determined according to the list L0 of the current block, the L1 motion vector of the collocated block is selected,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture list information indicates the list L**1** of the current block, the L**0** motion vector of the collocated block is selected,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

6. A method of video encoding, the method comprising:

generating collocated picture list information, which indicates whether a collocated picture of a current block is determined according to a list L**0** of the current block between the list L**0** and a list L**1** of the current block;

generating motion information of the current block based on a motion vector predictor of the current block according to the collocated block; and

generating residual information based on difference between prediction samples determined based on the motion information and samples of the current block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is determined between a L**0** motion vector and a L**1** motion vector of a collocated block according to the list L**0** or the list L**1** of the current block,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

7. A non-transitory computer-readable storage medium storing a bitstream, the bitstream comprising:

collocated picture list information to indicate whether a collocated picture of a current block is determined according to a list **L0** of the current block between the list **L0** and a list **L1** of the current block; and

motion information of the current block generated based on a motion vector predictor of the current block according to the collocated block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is determined between a **L0** motion vector and a **L1** motion vector of a collocated block according to the list **L0** or the list **L1** of the current block,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

8. A non-transitory computer-readable storage medium storing a bitstream, the bitstream comprising:

collocated picture list information to indicate whether a collocated picture of a current block is determined according to a list **L0** of the current block between the list **L0** and a list **L1** of the current block; and

motion information of the current block generated based on a motion vector predictor of the current block according to the collocated block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is selected between a **L0** motion vector and a **L1** motion vector of a collocated block according to the list **L0** or the list **L1** of the current block,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture

is determined according to the list L**0** of the current block, the L**1** motion vector of the collocated block is selected,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture list information indicates the list L**1** of the current block, the L**0** motion vector of the collocated block is selected,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

9. A non-transitory computer-readable storage medium storing a bitstream, the bitstream comprising:

collocated picture list information to indicate whether a collocated picture of a current block is determined according to a list L**0** of the current block between the list L**0** and a list L**1** of the current block;

motion information of the current block generated based on a motion vector predictor of the current block according to the collocated block; and

residual information generated based on difference between prediction samples determined based on the motion information and samples of the current block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is determined between a L**0** motion vector and a L**1** motion vector of a collocated block according to the list L**0** or the list L**1** of the current block,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

10. A non-transitory computer-readable storage medium storing a bitstream, the bitstream comprising:

collocated picture list information to indicate whether a collocated picture of a current block is determined according to a list L**0** of the current block between the list L**0** and a list L**1** of the current block;

motion information of the current block generated based on a motion vector predictor of the current block according to the collocated block; and

residual information generated based on difference between prediction samples determined based on the motion information and samples of the current block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is selected between a L**0** motion vector and a L**1** motion vector of a collocated block according to the list L**0** or the list L**1** of the current block,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture is determined according to the list L**0** of the current block, the L**1** motion vector of the collocated block is selected,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture list information indicates the list L**1** of the current block, the L**0** motion vector of the collocated block is selected,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block.

11. A non-transitory computer-readable storage medium storing a bitstream, the bitstream comprising:

collocated picture list information to indicate whether a collocated picture of a current block is determined according to a list **L0** of the current block between the list **L0** and a list **L1** of the current block;

motion information of the current block generated based on a motion vector predictor of the current block according to the collocated block; and

residual information generated based on difference between prediction samples determined based on the motion information and samples of the current block,

wherein:

a collocated block is determined in the collocated picture,

when reference pictures, which are available for prediction of the current block, are to be output prior to a current picture including the current block, a motion vector is selected between a **L0** motion vector and a **L1** motion vector of a collocated block according to the list **L0** or the list **L1** of the current block,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture is determined according to the list **L0** of the current block, the **L1** motion vector of the collocated block is selected,

when reference pictures, which are available for prediction of the current block, are to be output later than the current picture, and when the collocated picture list information indicates the list **L1** of the current block, the **L0** motion vector of the collocated block is selected,

a motion vector predictor candidate according to the collocated block is determined by using the determined motion vector, and

the motion vector predictor of the current block is determined among predictor candidates including the motion vector predictor candidate according to the collocated block,

the motion information of the current block is generated based on difference between a motion vector of the current block and a motion vector predictor of the current block according to the collocated block.