Claims

1. A video image decoding device comprising:

a variable length decoder that performs a variable-length decoding process on coded data multiplexed into a bitstream to obtain index information which specifies a motion vector for a coding block;

a motion compensator that performs a motion compensation prediction process on said coding block to generate a prediction image using a motion vector selected from one or more selectable motion vector candidates, said motion compensator selecting said motion vector from said motion vector candidates according to said index information;

wherein

said motion compensator prepares a list of said motion vector candidates including one or more spatial motion vectors which is obtained from a decoded block located around said coding block and/or a temporal motion vector which is obtained from a different picture which can be referred to by said coding block, said motion vector candidates being listed in accordance with a predetermined order, and said index information specifying a position in which one of said motion vector candidates exists within said list.

2. A video image decoding method comprising:

performing a variable-length decoding process on coded data multiplexed into a bitstream to obtain index information which specifies a motion vector for a coding block;

performing a motion compensation prediction process on said coding block to generate a prediction image using a motion vector selected from one or more selectable motion vector candidates, said motion vector being selected from

said motion vector candidates according to said index information;

wherein

said motion vector candidates include one or more spatial motion vectors which is obtained from a decoded block located around said coding block and/or a temporal motion vector which is obtained from a decoded picture which can be referred to by said coding block, said motion vector candidates being listed in accordance with a predetermined order, and said index information specifying a position in which one of said motion vector candidates exists within said list.

3. A video image encoding device comprising:

a motion compensator that performs a motion compensation prediction process on a coding block to generate a prediction image using a motion vector selected from one or more selectable motion vector candidates, said motion compensator selecting said motion vector from said motion vector candidates;

a variable encoder that performs a variable-coding process to generate index information which specifies selected one of said motion vector candidates; wherein

said motion compensator prepares a list of said motion vector candidates including one or more spatial motion vectors which is obtained from a coded block located around said coding block and/or a temporal motion vector which is obtained from a different picture which can be referred to by said coding block, said motion vector candidates being listed in accordance with a predetermined order, and said index information specifying a position in which one of said motion vector candidates exists within said list.

4. A video image encoding method comprising:

performing a motion compensation prediction process on a coding block to generate a prediction image using a motion vector selected from one or more selectable motion vector candidates, said motion compensator selecting said motion vector from said motion vector candidates;

performing a variable-coding process to generate index information which specifies selected one of said motion vector candidates; wherein

said motion compensator prepares a list of said motion vector candidates including one or more spatial motion vectors which is obtained from a coded block located around said coding block and/or a temporal motion vector which is obtained from a different picture which can be referred to by said coding block, said motion vector candidates being listed in accordance with a predetermined order, and said index information specifies a position in which one of said motion vector candidates exists within said list.

5. A non-transitory computer-readable storage medium storing a bit stream comprising:

a compressed data generated by performing compression process on a difference between an image and prediction image;

index information which specifies a motion vector used to perform a motion compensation prediction process to generate said prediction image;

wherein when said motion vector is selected from one or more motion vector candidates including one or more spatial motion vectors which is obtained from a coded block located around said coding block and/or a temporal motion vector which is obtained from a different picture which can be referred to by said coding block, said index information specifies selected one of said motion vector candidates,

and wherein said motion vector candidates being listed in accordance with a predetermined order, and said index information specifying a position in which one of said motion vector candidates exists within said list.

Claims

1. A moving image decoding device comprising:

a variable length decoding unit for performing a variable-length decoding process on coded data multiplexed into a bitstream to obtain index information specifying a motion vector for a coding block and control information for varying the number of motion vector candidates to be selected based on the index information; and

a motion compensation prediction unit for performing a motion compensation prediction process on said coding block to generate a prediction image, said motion compensation prediction unit generating said prediction image using a motion vector selected from one or more motion vector candidates, said motion compensation prediction unit selecting one of said motion vector candidates specified by said index information, wherein

said motion compensation prediction unit prepares said motion vector candidates including a spatial motion vector obtained from decoded blocks being located around said coding block or a temporal motion vector obtained from a motion vector of a decoded picture which can be referred to by said coding block based on the control information, and

said motion vector candidates are variable for each slice.

2. A moving image decoding method comprising:

a step for performing a variable-length decoding process on coded data multiplexed into a bitstream to obtain index information specifying a motion vector for a coding block and

control information for varying the number of motion vector candidates to be selected based on the index information; and

a step for performing a motion compensation prediction process on said coding block to generate a prediction image, said motion compensation prediction unit generating said prediction image using a motion vector selected from one or more motion vector candidates, said motion compensation prediction unit selecting one of said motion vector candidates specified by said index information, wherein

said motion vector candidates includes a spatial motion vector obtained from a motion vector of decoded blocks being located around said coding block or a temporal motion vector obtained from a motion vector of a decoded picture which can be referred to by said coding block based on the control information, and

said motion vector candidates are variable for each slice.

3. A moving image coding device comprising:

a motion compensation prediction unit for performing a motion compensation prediction process on a coding block to generate a prediction image, said motion compensation prediction unit generating said prediction image using a motion vector selected from one or more motion vector candidates, said motion compensation prediction unit preparing said motion vector candidates from a spatial motion vector obtained from coded blocks being located around said coding block and a temporal motion vector obtained from a motion vector of a coded picture which can be referred to by said coding block; and

a variable length encoding unit for generating index

information specifying selected one of said motion vector candidates, wherein

said motion vector candidates are variable for each slice, and

said variable length encoding unit generates control information for varying said motion vector candidates.

4. A moving image coding method comprising:

a step for preparing motion vector candidates from a spatial motion vector obtained from coded blocks being located around a coding block and a temporal motion vector obtained from a motion vector of a coded picture which can be referred to by said coding block;

a step for performing a motion compensation prediction process on said coding block to generate a prediction image, said prediction image being generated by using a motion vector selected from one or more motion vector candidates; and

a step for generating index information specifying selected one of said motion vector candidates, wherein

the number of said motion vector candidates is variable for each slice, and

when the number of said motion vector candidates is varied, control information for varying the number of said motion vector candidates is generated.

5. A moving image coded data that is decoded by a moving image decoding device for performing a motion compensation prediction process using index information and control information to generate a prediction image, said moving image coded data comprising;

a compression data generated from a difference between an original image and a prediction image generated by performing said motion compension prediction process on a coding block;

index information for a motion vector used to perform said prediction process; and

control information for varying the number of motion vector candidates to be selected based on the index information, wherein

said index information specifies selected one of motion vector candidates, when said motion vector is selected from said motion vector candidates including a spatial motion vector obtained from coded blocks being located around said coding block and a temporal motion vector obtained from a motion vector of a coded picture which can be referred to by said coding block, and

the number of said motion vector candidates is variable for each slice.