Claims

Claim 1 An image decoding device comprising:

a variable length decoding unit for performing variable-length decoding process on coded data multiplexed into a bitstream to obtain compressed data, coding mode and index information, each associated with a coding block;

a motion compensation prediction unit for performing a motion compensation prediction process on said coding block based on said coding mode to generate a prediction image using a motion vector selected from one or more selectable motion vector candidate, said motion compensation prediction unit selecting said motion vector indicated by said index information;

a decoded image generating unit for generating decoded image data by adding a difference image which is obtained by decoding said compressed data and said prediction image generated by said motion compensation prediction unit; wherein

said motion compensation prediction unit selects a spatial motion vector which is obtained from a decoded block located around said coding block or a temporal motion vector which is obtained from a decoded picture which can be referred to by said coding block according to said index information.

Claim 2 An image decoding method comprising:

a step for performing a variable-length decoding process on coded data multiplexed into a bitstream to obtain compressed data, coding mode and index information, each associated with a coding block;

a step for performing a motion compensation prediction process on said coding block based on said coding mode to generate a prediction image using a motion vector selected from one or more selectable motion vector candidate, said motion vector is selected according to said index information;

a step for generating decoded image data by adding a difference image which is obtained by decoding said compressed data and said prediction image; wherein

said motion vector candidate includes at least a spatial motion vector which is obtained from a decoded block located around said coding block or a temporal motion vector which is obtained from a decoded picture which can be referred to by said coding block.

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.