What is claimed is:

1. A video decoding method being executed by a video decoder and comprising the steps of:

determining whether a merge motion difference coding method is applied to a current block;

generating a merge candidate list for the current block;

specifying a merge candidate for the current block based on the merge candidate list; and

deriving a motion vector for the current block based on the merge candidate, wherein

when the merge motion difference coding method is applied to the current block, the motion vector of the current block is derived by adding an offset vector to a motion vector of the merge candidate,

when the maximum number of merge candidates that the merge candidate list may include is plural, the merge candidate of the current block is selected based on index information decoded from a bitstream indicating any one among the merge candidates, and

when the maximum number is 1, the merge candidate is determined without decoding the index information; wherein

a magnitude of the offset vector is determined based on first index information specifying one among motion magnitude candidates, and at least one among a maximum value and a minimum value of the motion magnitude candidates is set differently according to motion vector precision for the current block.

2. The method according to claim 1, wherein at least one among the maximum value and the minimum value of the motion magnitude candidates is set differently according to a value of a flag indicating numerical values of the motion magnitude candidates.

3. The method according to claim 2, wherein the flag is signaled at a picture level.

4. The method according to claim 1, wherein the magnitude of the offset vector is obtained by applying a shift operation to a value indicated by the motion magnitude candidate specified by the first index information.

5. The method according to any of claims 1 to 4, wherein a direction of the offset vector is determined based on second index information specifying one among vector direction candidates.

6. A video encoding method being executed by an encoder and comprising the steps of:

determining whether a merge motion difference coding method is applied to a current block;

generating a merge candidate list for the current block;

specifying a merge candidate for the current block based on the merge candidate list; and

deriving a motion vector for the current block based on the merge candidate, wherein

when the merge motion difference coding method is applied to the current block, the motion vector of the current block is derived by adding an offset vector to a motion vector of the merge candidate,

when the maximum number of merge candidates that the merge candidate list may include is plural, index information indicating the merge candidate of the current block among the merge candidates is encoded, and

when the maximum number is 1, encoding of the index information is omitted; wherein

the method further comprises the step of encoding first index information for specifying a motion magnitude candidate indicating a magnitude of the offset vector among a plurality of motion magnitude candidates, wherein at least one among a maximum value and a minimum value of the motion magnitude candidates is set differently according to motion vector precision for the current block.

7. The method according to claim 6, further comprising the step of encoding a flag indicating numerical values of the motion magnitude candidates, wherein at least one among the maximum value and the minimum value of the motion magnitude candidates is set differently according to a value of the flag.

8. The method according to claim 7, wherein the flag is encoded at a picture level.

9. The method according to claim 6, wherein the motion magnitude candidate has a value derived by applying a shift operation to the magnitude of the offset vector.

10. The method according to any of claims 6 to 9, further comprising the step of encoding second index information for specifying a vector direction candidate indicating a direction of the offset vector among a plurality of vector direction candidates.

11. A video decoder comprising:

at least one processor; and

a memory storing computer programs which, when executed by the at least one processor, cause the at least one processor to:

determine whether a merge motion difference coding method is applied to a current block;

generate a merge candidate list for the current block;

specify a merge candidate for the current block based on the merge candidate list; and

derive a motion vector for the current block based on the merge candidate, wherein

when the merge motion difference coding method is applied to the current block, the motion vector of the current block is derived by adding an offset vector to a motion vector of the merge candidate,

when the maximum number of merge candidates that the merge candidate list may include is plural, the merge candidate of the current block is selected based on index information decoded from a bitstream indicating any one among the merge candidates,

when the maximum number is 1, the merge candidate is determined without decoding the index information, and

a magnitude of the offset vector is determined based on first index information specifying one among motion magnitude candidates, and at least one among a maximum value and a minimum value of the motion magnitude candidates is set differently according to motion vector precision for the current block.

12. The video decoder according to claim 11, wherein at least one among the maximum value and the minimum value of the motion magnitude candidates is set differently according to a value of a flag indicating numerical values of the motion magnitude candidates.

13. The video decoding apparatus according to claim 12, wherein the flag is signaled at a picture level.

14. The video decoding apparatus according to claim 11, wherein the magnitude of the offset vector is obtained by applying a shift operation to a value indicated by the motion magnitude candidate specified by the first index information.

15. The video decoder according to any of claims 11 to 14, wherein a direction of the offset vector is determined based on second index information specifying one among vector direction candidates.

16. A video encoder comprising:

at least one processor; and

a memory storing computer programs which, when executed by the at least one processor, cause the at least one processor to:

determine whether a merge motion difference coding method is applied to a current block;

generate a merge candidate list for the current block;

specify a merge candidate for the current block based on the merge candidate list; and

derive a motion vector for the current block based on the merge candidate, wherein

when the merge motion difference coding method is applied to the current block, the motion vector of the current block is derived by adding an offset vector to a motion vector of the merge candidate,

when the maximum number of merge candidates that the merge candidate list may include is plural, index information indicating the merge candidate of the current block among the merge candidates is encoded, and

when the maximum number is 1, encoding of the index information is omitted; wherein

the computer programs are further executed by the at least one processor to cause the at least one processor to encode first index information for specifying a motion magnitude candidate indicating a magnitude of the offset vector among a plurality of motion magnitude candidates, wherein at least one among a maximum value and a minimum value of the motion magnitude candidates is set differently according to motion vector precision for the current block.

17. The video encoder according to claim 16, wherein the computer programs, when executed by the at least one processor, further cause the at least one processor to:

encode a flag indicating numerical values of the motion magnitude candidates, wherein at least one among the maximum value and the minimum value of the motion magnitude candidates is set differently according to a value of the flag.

18. The video encoding apparatus according to claim 17, wherein the flag is encoded at a picture level.

19. The video encoding apparatus according to claim 16, wherein the motion magnitude candidate has a value derived by applying a shift operation to the magnitude of the offset vector.

20. The video encoder according to any of claims 16 to 19, wherein the computer programs, when executed by the at least one processor, further cause the at least one processor to:

encode second index information for specifying a vector direction candidate indicating a direction of the offset vector among a plurality of vector direction candidates.