CLAIMS

1. A method of video decoding, comprising:

receiving a coded video bitstream including a current picture;

determining whether a current block in a current coding tree unit (CTU) included in the current picture is coded in intra block copy (IBC) mode based on a flag included in the coded video bitstream; and

in response to the current block being determined as coded in IBC mode,

determining a block vector that points to a first reference block of the current block;

performing an operation on the block vector when the first reference block is not within a valid search range of the current block, the block vector is modified by the operation to point to a second reference block that is within the valid search range of the current block; and

decoding the current block based on the modified block vector,

wherein the operation on the block vector is a modification operation such that an invalid block vector, which is a block vector out of the valid search range, is modified to be in the current CTU or a left neighboring CTU when a target range includes the current CTU and the left neighboring CTU, wherein the target range is the valid search range and includes the current CTU and a number of left CTUs depending on a size of a reference sample memory and a size of CTUs in a current picture.

2. The method according to claim 1, wherein the second reference block is in a fully reconstructed region, and the second reference block and the current block are in the same tile, slice, or tile group.

3. The method according to claim 1, wherein the performing the operation comprises:

performing a modulo operation on each of an x component and a y component of the block vector based on a size of the current CTU.

4. The method according to claim 1, wherein the performing the operation comprises:

performing a modulo operation on an x component of the block vector based on a multiple of a size of the current CTU; and

performing a modulo operation on a y component of the block vector based on the size of the current CTU.

5. The method according to claim 1, wherein the performing the operation modifies the block vector only when the first reference block is not within the valid search range of the current block.

6. The method according to claim 1, wherein the valid search range of the current block includes the current CTU.

7. The method according to claim 1, wherein the performing the operation modifies the block vector such that an offset of the first reference block relative to a CTU including the first reference block is the same of an offset of the second reference block relative to the current CTU.

8. The method according to claim 1, wherein the performing the operation comprises:

clipping the block vector so that the clipped block vector points to the second reference block that is at a boundary of the valid search range of the current block when the first reference block is not within the valid search range of the current block.

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

performing a shift operation on the x component and the y component of the block vector to change a resolution of the block vector into the one used for storage.

10. An apparatus, comprising:

processing circuitry configured to

receive a coded video bitstream including a current picture;

determine whether a current block in a current coding tree unit (CTU) included in the current picture is coded in intra block copy (IBC) mode based on a flag included in the coded video bitstream; and

in response to the current block being determined as coded in IBC mode,

determine a block vector that points to a first reference block of the current block;

perform an operation on the block vector when the first reference block is not within a valid search range of the current block, the block vector is modified by the operation to point to a second reference block that is within the valid search range of the current block; and

decode the current block based on the modified block vector,

wherein the operation on the block vector is a modification operation such that an invalid block vector, which is a block vector out of the valid search range, is modified to be in the current CTU or a left neighboring CTU when a target range includes the current CTU and the left neighboring CTU, wherein the target range is the valid search range and includes the current CTU and a number of left CTUs depending on a size of a reference sample memory and a size of CTUs in a current picture.

11. The apparatus according to claim 10, wherein the second reference block is in a fully reconstructed region, and the second reference block and the current block are in the same tile, slice, or tile group.

12. The apparatus according to claim 10, wherein

the operation is a modulo operation, and

the processing circuitry is configured to perform the modulo operation on each of an x component and a y component of the block vector based on a size of the current CTU.

13. The apparatus according to claim 10, wherein

the operation is a modulo operation, and

the processing circuitry is configured to perform the modulo operation on an x component of the block vector based on a multiple of a size of the current CTU, and perform the modulo operation on a y component of the block vector based on the size of the current CTU.

14. The apparatus according to claim 10, wherein the operation modifies the block vector only when the first reference block is not within the valid search range of the current block.

15. The apparatus according to claim 10, wherein the valid search range of the current block includes the current CTU.

16. The apparatus according to claim 10, wherein the operation modifies the block vector such that an offset of the first reference block relative to a CTU including the first reference block is the same of an offset of the second reference block relative to the current CTU.

17. The apparatus according to claim 10, wherein the operation clips the block vector so that the clipped block vector points to the second reference block that is at a boundary of the valid search range of the current block when the first reference block is not within the valid search range of the current block.

18. A non-transitory computer-readable storage medium storing instructions which when executed by a computer for video decoding cause the computer to perform the method according to any one of claims 1 to 9.