CLAIMS

1. A method for video decoding in a decoder including a circuitry, comprising:

decoding prediction information for a current block in a current picture that is a part of a coded video sequence, the prediction information indicating an intra prediction direction for the current block that is one of (i) a diagonal intra prediction direction or (ii) a neighboring intra prediction direction adjacent to the diagonal intra prediction direction;

determining a usage of a position dependent prediction combination (PDPC) process according to the intra prediction direction of the current block, the same PDPC process being applied to both the diagonal intra prediction direction and the neighboring intra prediction direction; and

reconstructing, with the circuitry of the decoder, the current block based on the usage of the PDPC process on the current block, wherein

based on the intra prediction direction being closer to a vertical intra prediction direction than a horizontal intra prediction direction, the PDPC process is performed on a first number of columns of samples in the current block; and

based on the intra prediction direction being closer to the horizontal intra prediction direction than the vertical intra prediction direction, the PDPC process is performed on a second number of rows of samples in the current block.

2. The method of claim 1, wherein the diagonal intra prediction direction is one of a bottom-left intra prediction direction and a top-right intra prediction direction.

3. The method of claim 2, wherein when the diagonal intra prediction direction is the bottom-left intra prediction direction, a mode index of the neighboring intra prediction direction is below a mode index of a horizontal intra prediction direction.

4. The method of claim 2, wherein when the diagonal intra prediction direction is the top-right intra prediction direction, a mode index of the neighboring intra prediction direction is above a mode index of a vertical intra prediction direction.

5. The method of claim 1, further comprising:

when the intra prediction direction is the neighboring intra prediction direction,

determining whether the intra prediction direction points to a fractional position; and

determining an early termination of the PDPC process in response to a determination that the intra prediction direction points to the fractional position.

6. The method of claim 1, further comprising:

when a current sample in the current block is to be filtered by the PDPC process,

determining whether a reference sample of the current sample is located within a preset range according to a per-row or per-column checking.

7. The method of claim 6, wherein the per-column checking depends on at least one of (i) a total number of available reference samples that are located left to the current block, (ii) a block height of the current block, and (iii) a horizontal coordinate value of the current sample.

8. The method of claim 6, wherein the per-row checking depends on at least one of (i) a total number of available reference samples that are located above the current block, (ii) a block width of the current block, (iii) and a vertical coordinate value of the current sample.

9. The method of claim 1, wherein an angle of the intra prediction direction is equal to or greater than a preset value.

10. The method of claim 9, wherein

the first number is determined according to the preset value and a block size of the current block; and

the second number is determined according to the preset value and the block size of the current block.

11. An apparatus for video decoding, comprising a processing circuitry configured to:

decode prediction information for a current block in a current picture that is a part of a coded video sequence, the prediction information indicating an intra prediction direction for the current block that is one of (i) a diagonal intra prediction direction or (ii) a neighboring intra prediction direction adjacent to the diagonal intra prediction direction;

determine a usage of a position dependent prediction combination (PDPC) process according to the intra prediction direction of the current block, the same PDPC process being applied to both the diagonal intra prediction direction and the neighboring intra prediction direction; and

reconstruct the current block based on the usage of the PDPC process on the current block, wherein

based on the intra prediction direction being closer to a vertical intra prediction direction than a horizontal intra prediction direction, the PDPC process is performed on a first number of columns of samples in the current block; and

based on the intra prediction direction being closer to the horizontal intra prediction direction than the vertical intra prediction direction, the PDPC process is performed on a second number of rows of samples in the current block.

12. The apparatus of claim 11, wherein the diagonal intra prediction direction is one of a bottom-left intra prediction direction and a top-right intra prediction direction.

13. The apparatus of claim 12, wherein when the diagonal intra prediction direction is the bottom-left intra prediction direction, a mode index of the neighboring intra prediction direction is below a mode index of a horizontal intra prediction direction.

14. The apparatus of claim 12, wherein when the diagonal intra prediction direction is the top-right intra prediction direction, a mode index of the neighboring intra prediction direction is above a mode index of a vertical intra prediction direction.

15. The apparatus of claim 11, wherein the processing circuitry is further configured to:

when the intra prediction direction is the neighboring intra prediction direction,

determine whether the intra prediction direction points to a fractional position; and

determine an early termination of the PDPC process in response to a determination that the intra prediction direction points to the fractional position.

16. The apparatus of claim 11, wherein the processing circuitry is further configured to:

when a current sample in the current block is to be filtered by the PDPC process,

determine whether a reference sample of the current sample is located within a preset range according to a per-row or per-column checking.

17. The apparatus of claim 16, wherein the per-column checking depends on at least one of (i) a total number of available reference samples that are located left to the current block, (ii) a block height of the current block, and (iii) a horizontal coordinate value of the current sample.

18. The apparatus of claim 16, wherein the per-row checking depends on at least one of (i) a total number of available reference samples that are located above the current block, (ii) a block width of the current block, (iii) and a vertical coordinate value of the current sample.

19. The apparatus of claim 11, wherein an angle of the intra prediction direction is equal to or greater than a preset value.

20. A non-transitory computer-readable storage medium storing a program executable by at least one processor to perform:

decoding prediction information for a current block in a current picture that is a part of a coded video sequence, the prediction information indicating an intra prediction direction for the current block that is one of (i) a diagonal intra prediction direction or (ii) a neighboring intra prediction direction adjacent to the diagonal intra prediction direction;

determining a usage of a position dependent prediction combination (PDPC) process according to the intra prediction direction of the current block, the same PDPC process being applied to both the diagonal intra prediction direction and the neighboring intra prediction direction; and

reconstructing the current block based on the usage of the PDPC process on the current block, wherein

based on the intra prediction direction being closer to a vertical intra prediction direction than a horizontal intra prediction direction, the PDPC process is performed on a first number of columns of samples in the current block; and

based on the intra prediction direction being closer to the horizontal intra prediction direction than the vertical intra prediction direction, the PDPC process is performed on a second number of rows of samples in the current block.