CLAIMS

1. An image decoding method performed by an image decoding apparatus, the image decoding method comprising:

generating prediction samples by performing intra prediction on a current chroma block;

determining whether to apply position dependent intra prediction combination (PDPC) to the prediction samples; and

generating final prediction samples of the current chroma block, by applying PDPC to the prediction samples based on the determination,

wherein, based on a size of the current chroma block satisfying a predetermined condition, block difference pulse code modulation (BDPCM) not being applied to the current chroma block, a reference sample line being a predetermined reference sample line, and one of conditions related to an intra prediction mode of the current chroma block being satisfied, it is determined to apply PDPC to the prediction samples,

wherein the conditions include the intra prediction mode having an index greater than or equal to 50 and less than INTRA_LT_CCLM,

wherein, based on the size of the current chroma block not satisfying the predetermined condition, it is determined not to apply PDPC to the prediction samples, and

wherein the predetermined condition is that a width of the current chroma block is greater than or equal to 4 and a height of the current chroma block is greater to or equal to 4.

2. The image decoding method of claim 1,

wherein, based on a reference sample line not being a predetermined reference sample line, it is determined not to apply PDPC to the prediction samples.

3. The image decoding method of claim 2, wherein the predetermined reference sample line is a first reference sample line adjacent to the current chroma block.

4. An image encoding method performed by an image encoding apparatus, the image encoding method comprising:

generating prediction samples by performing intra prediction on a current chroma block;

determining whether to apply position dependent intra prediction combination (PDPC) to the prediction samples; and

generating final prediction samples of the current chroma block, by applying PDPC to the prediction samples based on the determination,

wherein, based on a size of the current chroma block satisfying a predetermined condition, block difference pulse code modulation (BDPCM) not being applied to the current chroma block, a

reference sample line being a predetermined reference sample line, and one of conditions related to an intra prediction mode of the current chroma block being satisfied, it is determined to apply PDPC to the prediction samples,

wherein the conditions include the intra prediction mode having an index greater than or equal to 50 and less than INTRA_LT_CCLM,

wherein, based on the size of the current chroma block not satisfying the predetermined condition, it is determined not to apply PDPC to the prediction samples, and

wherein the predetermined condition is that a width of the current chroma block is greater than or equal to 4 and a height of the current chroma block is greater to or equal to 4.

5. The image encoding method of claim 4, wherein based on a reference sample line not being a predetermined reference sample line, it is determined not to apply PDPC to the prediction samples.

6. A method of transmitting a bitstream generated by an image encoding method, the image encoding method comprising:

generating prediction samples by performing intra prediction on a current chroma block;

determining whether to apply position dependent intra prediction combination (PDPC) to the prediction samples; and

generating final prediction samples of the current chroma block, by applying PDPC to the prediction samples based on the determination,

wherein, based on a size of the current chroma block satisfying a predetermined condition, block difference pulse code modulation (BDPCM) not being applied to the current chroma block, a reference sample line being a predetermined reference sample line, and one of conditions related to an intra prediction mode of the current chroma block being satisfied, it is determined to apply PDPC to the prediction samples,

wherein the conditions include the intra prediction mode having an index greater than or equal to 50 and less than INTRA_LT_CCLM,

wherein, based on the size of the current chroma block not satisfying the predetermined condition, it is determined not to apply PDPC to the prediction samples, and

wherein the predetermined condition is that a width of the current chroma block is greater than or equal to 4 and a height of the current chroma block is greater to or equal to 4.

7. A non-transitory computer-readable recording medium storing a bitstream generated by an image encoding method, the image encoding method comprising:

generating prediction samples by performing intra prediction on a current chroma block;

determining whether to apply position dependent intra prediction combination (PDPC) to the prediction samples; and

generating final prediction samples of the current chroma block, by applying PDPC to the prediction samples based on the determination,

wherein, based on a size of the current chroma block satisfying a predetermined condition, block difference pulse code modulation (BDPCM) not being applied to the current chroma block, a reference sample line being a predetermined reference sample line, and one of conditions related to an intra prediction mode of the current chroma block being satisfied, it is determined to apply PDPC to the prediction samples,

wherein the conditions include the intra prediction mode having an index greater than or equal to 50 and less than INTRA_LT_CCLM,

wherein, based on the size of the current chroma block not satisfying the predetermined condition, it is determined not to apply PDPC to the prediction samples,

wherein the predetermined condition is that a width of the current chroma block is greater than or equal to 4 and a height of the current chroma block is greater to or equal to 4.