【CLAIMS】

1. A decoding method for generating a prediction block in intra prediction, the method comprising:

restoring a mode group indicator and a prediction mode index;

constructing a most probable mode (MPM) group including three intra prediction modes determined using a left and an above intra prediction modes of a current block;

determining an intra prediction mode specified by the prediction mode index in the MPM group as an intra prediction mode of a current block if the mode group indicator indicates the MPM group, and deriving an intra prediction mode of the current block using the prediction mode index and the three intra prediction modes of the MPM group if the mode group indicator does not indicate the MPM group;

determining a size of the prediction block based on transform size information;

determining whether all reference pixels of the current block are available;

generating reference pixels if one or more reference pixels of the current block are unavailable;

adaptively filtering the reference pixels based on the intra prediction mode and the size of the current block, wherein if the size of the current block is 4x4, the reference pixels are not filtered, and if the size of the current block is larger than 4x4, the number of intra prediction mode where the reference pixels are filtered increases as the size of the current block becomes larger; and

generating the prediction block using the reference pixels based on the restored intra prediction mode,

wherein when the left intra prediction mode is equal to the above intra prediction mode and the left intra prediction mode is one of two non-directional intra prediction modes, the MPM group includes the two non-directional intra prediction modes and a vertical mode.

2. The method of claim 1, wherein the three intra prediction modes are reordered in the order of mode number to determine the first intra prediction mode, the second intra prediction mode and the third intra prediction mode such that the first intra prediction mode is an intra prediction mode having lowest mode number, the second intra prediction mode is an intra prediction mode having middle mode number and the third intra prediction mode is an intra prediction mode having highest mode number.

3. The method of claim 1, wherein the two non-directional intra prediction modes are a DC mode and a planar mode.

4. The method of claim 1, wherein in the vertical mode, the prediction pixels of the prediction block which are adjacent to the left reference pixels are generated by using a vertical reference pixel and a variance between a corner pixel and a left neighboring pixel.

5. An encoding method for generating a prediction block in intra prediction, the method comprising:

generating a mode group indicator and a prediction mode index;

constructing a most probable mode (MPM) group including three intra prediction modes of a current block;

determining whether all reference pixels of the current block are available;

generating reference pixels if one or more reference pixels of the current block are unavailable;

adaptively filtering the reference pixels based on an intra prediction mode and a size of the current block; and

generating the prediction block using the reference pixels based on the intra prediction mode of the current block,

wherein when the intra prediction mode of a current block belongs to the MPM group, the mode group indicator indicates the MPM group and the prediction mode index indicates the intra prediction mode of a current block among the three intra prediction modes in the MPM group, and when the intra prediction mode of the current block does not belong to the MPM group, the mode group indicator does not indicate the MPM group and the prediction mode index specifies the intra prediction mode of the current block among intra prediction modes besides the three intra prediction modes in the MPM group by using the three intra prediction modes in the MPM group,

wherein if the size of the current block is 4x4, the reference pixels are not filtered, and if the size of the current block is larger than 4x4, the number of intra prediction mode where the reference pixels are filtered increases as the size of the current block becomes larger,

wherein when the left intra prediction mode is equal to the above intra prediction mode and the left intra prediction mode is one of two non-directional intra

prediction modes, the MPM group includes the two non-directional intra prediction modes and a vertical mode.

6. The method of claim 5, wherein the two non-directional intra prediction modes are a DC mode and a planar mode.

7. A computer-readable storage medium storing encoded video information, comprising:

a bit stream stored in the medium, the bit stream comprising entropy-encoded information on a mode group indicator and a prediction mode index for generating a prediction block which is generated by using reference pixels based on an intra prediction mode of a current block,

wherein the mode group indicator and the prediction mode index specify the intra prediction mode of the current block using a most probable mode (MPM) group which includes three intra prediction modes,

wherein, when an intra prediction mode of a current block belongs to the MPM group, the mode group indicator indicates the MPM group and the prediction mode index indicates the intra prediction mode of a current block among the three intra prediction modes in the MPM group, and when the intra prediction mode of the current block does not belong to the MPM group, the mode group indicator does not indicate the MPM group and the prediction mode index specifies the intra prediction mode of the current block among intra prediction modes besides the three intra prediction modes in the MPM group, and

wherein if one or more reference pixels of the current block are unavailable, reference pixels are generated and the reference pixels are adaptively filtered based on the intra prediction mode and a size of the current block,

wherein if the size of the current block is 4x4, the reference pixels are not filtered, and if the size of the current block is larger than 4x4, the number of intra prediction mode where the reference pixels are filtered increases as the size of the current block becomes larger,

wherein when the left intra prediction mode is equal to the above intra prediction mode and the left intra prediction mode is one of two non-directional intra prediction modes, the MPM group includes the two non-directional intra prediction modes and a vertical mode.