

What is claimed is:

1. A method for decoding a picture, applied to a decoder, wherein the method comprises:

determining (S1001) an intra prediction mode of a luma component of a current block; the current block being coded in a Direct Mode (DM) which uses inter-component correlation in chroma intra prediction process, where the intra prediction mode of a center position of a co-located luma block corresponding to a current luma block is used to perform intra prediction of the current chroma block;

when the intra prediction mode is a Matrix-based Intra Prediction (MIP) mode;

mapping (S1002) the MIP mode to a first non-MIP mode; wherein the first non-MIP mode is used for determining the intra prediction mode for chroma component of the current block, the first non-MIP mode is one of preset non-MIP modes, and the non-MIP modes comprise at least one of a direct current (DC) mode, a planar mode and an angular prediction mode;

using the intra prediction mode for the chroma component to decode the current block and for the luma component to decode a following block.

2. The method according to claim 1, wherein the first non-MIP mode is the planar mode.

3. The method according to claim 1 or 2, wherein determining the intra prediction mode for the current block comprises:

decoding prediction mode information signalled in a bitstream and associated with the luma component of the current block, wherein the prediction mode information indicates the intra prediction mode for the current block.

4. The method according to claim 1 or 2, wherein the first non-MIP mode is determined as the intra prediction mode for chroma component of the current block.

5. A decoder, comprises:

a determining module (171) configured to determine an intra prediction mode of

a luma component of a current block, the current block being coded in a Direct Mode (DM) which uses inter-component correlation in chroma intra prediction process, where the intra prediction mode of a center position of a co-located luma block corresponding to a current luma block is used to perform intra prediction of the current chroma block;

a mapping module (172, 173) configured to,

when the intra prediction mode is a Matrix-based Intra Prediction (MIP) mode;

map the MIP mode to a first non-MIP mode; wherein the first non-MIP mode is used for determining the intra prediction mode for chroma component of the current block, the first non-MIP mode is one of preset non-MIP modes, and the non-MIP modes comprise at least one of a direct current (DC) mode, a planar mode and an angular mode; and

use the intra prediction mode for the chroma component to decode the current block and for the luma component to decode a following block.

6. The decoder according to claim 5, wherein the first non-MIP mode is the planar mode.

7. The decoder according to claim 5 or 6, wherein the determining module (171) is configured to: decode prediction mode information signalled in a bitstream, wherein the prediction mode information indicates the intra prediction mode for the current block.

8. The decoder according to claim 5 or 6, the first non-MIP mode is determined as the intra prediction mode for chroma component of the current block.

9. A method for encoding a picture, applied to an encoder, wherein the method comprises:

determining (S1001) an intra prediction mode of a luma component of a current block, the current block being coded in a Direct Mode (DM) which uses inter-component correlation in chroma intra prediction process, where the intra prediction mode of a center position of a co-located luma block corresponding to a

current luma block is used to perform intra prediction of the current chroma block;

when the intra prediction mode is a Matrix-based Intra Prediction (MIP) mode;

mapping (S1002) the MIP mode to a first non-MIP mode; wherein the first non-MIP mode is used for determining the intra prediction mode for chroma component of the current block, the first non-MIP mode is one of preset non-MIP modes, and the non-MIP modes comprise at least one of a direct current (DC) mode, a planar mode and an angular prediction mode;

using (S1003) the intra prediction mode for the chroma component to encode the current block and for the luma component to encode the following block.

10. The method according to claim 9, wherein the first non-MIP mode is the planar mode.

11. The method according to claim 9 or 10, comprising:

writing prediction mode information into a bitstream, wherein the prediction mode information indicates the intra prediction mode for the current block.

12. The method according to claim 9 or 10, wherein the first non-MIP mode is determined as the intra prediction mode for chroma component of the current block.

13. An encoder, comprises:

a determining module (151) configured to determine an intra prediction mode of a luma component of a current block, the current block being coded in a Direct Mode (DM) which uses inter-component correlation in chroma intra prediction process, where the intra prediction mode of a center position of a co-located luma block corresponding to a current luma block is used to perform intra prediction of the current chroma block;

a mapping module (152, 153) configured to:

when the intra prediction mode is a Matrix-based Intra Prediction (MIP) mode;

map the MIP mode to a first non-MIP mode; wherein the first non-MIP mode is used for determining the intra prediction mode for chroma component of the current

block, the first non-MIP mode is one of preset non-MIP modes, and the non-MIP modes comprise at least one of a direct current (DC) mode, a planar intra prediction mode and an angular prediction mode;

use the intra prediction mode for the chroma component to encode the current block and for the luma component to encode a following block.

14. The encoder according to claim 13, wherein the first non-MIP mode is the planar mode.

15. The encoder according to claim 13 or 14, wherein the determining module (151) is configured to: write prediction mode information into a bitstream, wherein the prediction mode information indicates the intra prediction mode for the current block.

16. The encoder according to claim 13 or 14, the first non-MIP mode is determined as the intra prediction mode for chroma component of the current block.

17. A non-transitory computer readable storage medium in which executable instructions are stored, when the executable instructions are executed by one or more processors, the one or more processors executing the mapping method according to any one of claims 1 to 4 and 9 to 12.

18. A non-transitory computer-readable storage medium, having a computer program and a bitstream stored thereon, wherein the computer program, when executed by a processor, enables the processor to perform the steps of the method for encoding the picture of claim 9 to generate the bitstream.