

CLAIMS

1. A method of intra prediction for a picture block implemented by a decoding device, comprising:

obtaining a value of a first indication information of a current block from a bitstream when
5 the first indication information is present, or the value of the first indication information is
inferred to be equal to 1 when the first indication information is not present in the bitstream,
the value of the first indication information indicating whether an intra prediction mode of
the current block is comprised in a set of most probable modes, wherein the set of most
probable modes comprises 5 candidate intra prediction modes and Planar mode;

10 obtaining a value of a reference index line of the current block from the bitstream when the
value of the reference index line is present, or the value of the reference index line is inferred
to be equal to 0 when the reference index line is not present in the bitstream;

when the value of the first indication information indicates the intra prediction mode of the
current block is comprised in the set of most probable modes, and when the value of the

15 reference index line indicates the closest neighboring reference line to the current block is
used, obtaining a value of a second indication information of the current block from the
bitstream when the second indication information is present, or the value of the second
indication information is inferred to be equal to 1 when the second indication information is
not present in the bitstream, the value of the second indication information of the current

20 block indicating whether the intra prediction mode of the current block is Planar mode or not,
wherein the first indication information is indicated by a first flag `intra_luma_mpm_flag`, and
the second indication information is indicated by a second flag `intra_luma_not_planar_flag`,
wherein when the value of `intra_luma_mpm_flag` equals to 1, the intra prediction mode of the
current block is comprised in the set of most probable modes, and when the value of the

25 reference index line of the current block equals to 0, the closest neighboring reference line to
the current block is used,

when the value of the second indication information of the current block indicating the intra prediction mode of the current block is not Planar mode, intra_luma_mpm_idx corresponding to an index of the 5 candidate intra prediction modes is parsed, predicting the current block according to the index and entries of an MPM list.

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2. The method of claim 1, wherein the value of the second indication information is context adaptive binary arithmetic coding (CABAC) context decoded.

3. The method of any one of claims 1-2, wherein the method further comprises:

10 parse the second flag using context based on whether the current block is an intra block with intra sub-partition (ISP) coding mode enabled or not.

4. The method of any one of claims 1-3, wherein when the value of the second indication information of the current block indicates the intra prediction mode of the current block is not
15 Planar mode, and when one or more of the following conditions are true, a candidate intra prediction mode candIntraPredModeX is set equal to INTRA_PLANAR:

- The variable availableX is equal to FALSE;
- CuPredMode[xNbX][yNbX] is not equal to MODE_INTRA; or
- X is equal to B and $yCb - 1$ is less than
20 $((yCb \gg CtbLog2SizeY) \ll CtbLog2SizeY)$.

wherein X being replaced by either neighbor block A or B, a luma location (xCb , yCb) specifying the top-left sample of the current luma coding block relative to the top-left luma sample of the current picture, the location (xNbA, yNbA) of the neighbor A is set equal to (xCb - 1, yCb + cbHeight - 1), the location (xNbB, yNbB) of the neighbor B is set equal
25 to (xCb + cbWidth - 1, yCb - 1), a variable cbWidth specifying the width of the current

coding block in luma samples, a variable cbHeight specifying the height of the current coding block in luma samples, CuPredMode representing a current prediction mode, SizeY representing the size of Y components of a coding tree block.

- 5 5. The method of any one of claims 1-4, wherein when an intra prediction mode of a left neighbor block and an intra prediction mode of an above neighbor block are both non-angular modes, the MPM list comprises:

candModeList[0] = INTRA_DC

candModeList[1] = INTRA_ANGULAR50

10 candModeList[2] = INTRA_ANGULAR18

candModeList[3] = INTRA_ANGULAR46

candModeList[4] = INTRA_ANGULAR54.

6. The method of any one of claims 1-5, wherein the step of obtaining the value of the second indication information comprise:

parsing a bitstream to obtain the value of the second indication information;

or when Multiple Reference Line (MRL) coding is enabled, the value of the second indication information is obtained by a default value.

- 20 7. A method of intra prediction for a picture block implemented by an encoding device, comprising:

determining whether an intra prediction mode of a current block is comprised in a set of most probable modes, wherein the set of most probable modes comprises 5 candidate intra prediction modes and Planar mode;

- 25 determining whether the closest neighboring reference line to the current block is used for intra prediction;

encoding a bitstream, wherein the bitstream includes information to indicate whether the intra prediction mode of the current block is Planar mode when the intra prediction mode of the current block is comprised in the set of most probable modes, and the closest neighboring reference line to the current block is used for intra prediction;

5 wherein the bitstream includes a first flag `intra_luma_mpm_flag` indicating whether the intra prediction mode of the current block is comprised in the set of most probable modes, and a second flag `intra_luma_not_planar_flag` indicating whether the intra prediction mode of the current block is Planar mode;

wherein when the value of `intra_luma_mpm_flag` equals to 1, the intra prediction mode of the
10 current block is comprised in the set of most probable modes, and when a value of the reference index line of the current block equals to 0, the closest neighboring reference line to the current block is used;

when the value of the second flag indicating the intra prediction mode of the current block is not Planar mode, the bitstream includes `intra_luma_mpm_idx` corresponding to an index of
15 the 5 candidate intra prediction modes;

wherein the current block is predicted according to the index and entries of an MPM list.

8. The method of claim 7, wherein the information to indicate whether the intra prediction mode of the current block is Planar mode is context adaptive binary arithmetic coding
20 (CABAC) context encoded, and wherein the context includes whether the current block is an intra block with intra sub-partition (ISP) coding mode enabled.

9. A decoding device for intra prediction of a picture block, the device comprising:
a first obtaining unit, configured to obtain a value of a reference index line of a current block
25 from a bitstream when the value of the reference index line is present, or the value of the reference index line is inferred to be equal to 0 when the reference index line is not present

in the bitstream, and further configured to obtain a value of a first indication information of the current block from the bitstream when the first indication information is present, or the value of the first indication information is inferred to be equal to 1 when the first indication information is not present in the bitstream, the value of the first indication information
5 indicating whether an intra prediction mode of the current block is comprised in a set of most probable modes, wherein the set of most probable modes comprises 5 candidate intra prediction modes and Planar mode;

a second obtaining unit, configure to obtain a value of a second indication information of the current block from a bitstream when the second indication information is present, or the value
10 of the second indication information is inferred to be equal to 1 when the second indication information is not present in the bitstream, when the value of the first indication information indicates the intra prediction mode of the current block is comprised in the set of most probable modes, and when the value of the reference index line indicates the closest neighboring reference line to the current block is used, wherein the value of the second
15 indication information of the current block indicates whether the intra prediction mode of the current block is Planar mode, wherein the first indication information is indicated by a first flag `intra_luma_mpm_flag`, and the second indication information is indicated by a second flag `intra_luma_not_planar_flag`, wherein when the value of `intra_luma_mpm_flag` equals to 1, the intra prediction mode of the current block is comprised in the set of most probable
20 modes, and when the value of the reference index line of the current block equals to 0, the closest neighboring reference line to the current block is used,

when the value of the second indication information of the current block indicating the intra prediction mode of the current block is not Planar mode, `intra_luma_mpm_idx` corresponding to an index of the 5 candidate intra prediction modes is parsed;

25 wherein the current block is predicted according to the index and entries of an MPM list.

10. An encoding device for intra prediction of a picture block, comprising:

a determining unit, configured to determine whether an intra prediction mode of a current block is comprised in a set of most probable modes, and to determine whether the closest neighboring reference line to the current block is used for intra prediction, wherein the set of

5 most probable modes comprises 5 candidate intra prediction modes and Planar mode;

an encoding unit, configured to encode a bitstream, wherein the bitstream includes information to indicate whether the intra prediction mode of the current block is Planar mode when the intra prediction mode of the current block is comprised in the set of most probable modes, and the closest neighboring reference line to the current block is used for intra

10 prediction;

wherein the bitstream includes a first flag `intra_luma_mpm_flag` indicating whether the intra prediction mode of the current block is comprised in the set of most probable modes, and a second flag `intra_luma_not_planar_flag` indicating whether the intra prediction mode of the current block is Planar mode;

15 when the value of the second flag indicating the intra prediction mode of the current block is not Planar mode, the bitstream includes `intra_luma_mpm_idx` corresponding to an index of the 5 candidate intra prediction modes;

wherein the current block is predicted according to the index and entries of an MPM list.

20 11. A computer program product comprising a program code which, when executed by a computer, causes the computer to carry out the method according to any one of claims 1 to 8.