## CLAIMS

1. A prediction method in an image block encoding or decoding, comprising:

obtaining availability information about reference blocks of a current image block, and determining whether the reference blocks are available according to the availability information, wherein the reference blocks of the current image block comprise a left side block, an upper side block, and an upper left block of the current image block;

if at least one of the reference blocks is available, and at least one is unavailable, filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block; and

predicting the current image block according to the reference pixel value.

2. The prediction method according to claim 1, wherein the availability information comprises: whether a reference block is located inside a border of an image where the current image block is located; whether the reference block is located in a same slice with the current image block; and whether the reference block has already been encoded or decoded.

3. The prediction method according to claim 2, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located;

determining whether the reference block is located in a same slice with the current image block; and

determining whether the reference block has already been encoded or decoded,

if the reference block is located inside the border of the image where the current image block is located, is located in the same slice with the current image block, and has already been encoded or decoded, the reference block is available.

4. The prediction method according to claim 1, wherein the if at least one of the reference blocks is available, and at least one is unavailable, filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block comprises:

if the left side block is available, and the upper side block is unavailable, filling the pixel value of the left side block to the upper side block;

if the upper side block is available, and the left side block is unavailable, filling the pixel

value of the upper side block to the left side block;

if the upper left block is unavailable, and one of the left side block and upper side block is available, filling the pixel value of the available one of the left side block and upper side block to the upper left block; and

if the upper left block is unavailable, and both the left side block and upper side block are available, obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block.

5. The prediction method according to claim 4, wherein the obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block comprises:

obtaining an average value of the pixel values of pixel points in the left side block and upper side block that are nearest to a pixel point at an upper left corner of the current image block; and

filling the average value to a lower right corner of the upper left block.

6. The prediction method according to claims 1 to 4, wherein the filling a pixel value in the available reference block to the unavailable reference block comprises:

obtaining a pixel value used for filling from pixel points in the available reference block that are nearest to a pixel point at an upper left corner of the current image block; and

filling the pixel value used for filling to the unavailable reference block.

7. A prediction method in a encoding or decoding, comprising:

obtaining a prediction direction;

if the prediction direction points to an upper right block of a current image block, the upper right block is unavailable, and a left side block of the current image block is available, filling a pixel value of the left side block of the current image block to a lower side block of the current image block, and obtaining a pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling; and

predicting a pixel value of the current image block according to the pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling and the prediction direction.

8. The prediction method according to claim 7, wherein when the upper right block meets any one of the following conditions, the upper right block is unavailable:

the upper right block is located outside a border of an image where the current image block is located;

the upper right block is located at a different slice from the current image block; and

the upper right block has not been encoded or decoded.

9. A predictor used in a encoding or decoding, comprising:

an availability determining module, configured to obtain availability information about reference blocks of a current image block, and determine whether the reference blocks are available according to the availability information, wherein the reference blocks of the current image block comprise a left side block, an upper side block, and an upper left block of the current image block;

a pixel value filling module, configured to: if at least one of the reference blocks is available, and at least one is unavailable, fill a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block; and

a predicting module, configured to predict the current image block according to the reference pixel value.

10. The predictor according to claim 9, wherein the availability information comprises: whether a reference block is located inside a border of an image where the current image block is located; whether the reference block is located in a same slice with the current image block; and whether the reference block has already been encoded or decoded.

11. The predictor according to claim 10, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located;

determining whether the reference block is located in a same slice with the current image block; and

determining whether the reference block has already been encoded or decoded,

if the reference block is located inside the border of the image where the current image block is located, is located in the same slice with the current image block, and has already been encoded or decoded, the reference block is available.

12. The predictor according to claim 9, wherein the if at least one of the reference blocks is available, and at least one is unavailable, filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block comprises:

if the left side block is available, and the upper side block is unavailable, filling the pixel value of the left side block to the upper side block;

if the upper side block is available, and the left side block is unavailable, filling the pixel value of the upper side block to the left side block;

if the upper left block is unavailable, and one of the left side block and upper side block is available, filling the pixel value of the available one of the left side block and upper side block to the upper left block;

if the upper left block is unavailable, and both the left side block and upper side block are available, obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block.

13. The predictor according to claim 12 wherein the obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block comprises:

obtaining an average value of the pixel values of pixel points in the left side block and upper side block that are nearest to a position of a pixel point at an upper left corner of the current image block; and

filling the average value to a lower right corner of the upper left block.

14. The predictor method according to claims 9 to 12, wherein the filling a pixel value in the available reference block to the unavailable reference block comprises:

obtaining a pixel value used for filling from pixel points in the available reference block that are nearest to a pixel point at an upper left corner of the current image block; and

filling the pixel value used for filling to the unavailable reference block.

15. A predictor in a encoding or decoding, comprising:

a prediction direction obtaining module, configured to obtain a prediction direction;

a pixel value filling module, configured to: when the prediction direction points to an upper right block of a current image block, the upper right block is unavailable, and a left side block of the current image block is available, fill a pixel value of the left side block of the current image block to a lower side block of the current image block, and obtain a pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling; and

a predicting module, configured to predict a pixel value of the current image block according to the pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling and the prediction direction.

16. The predictor according to claim 15, wherein when the upper right block meets any one of the following conditions, the upper right block is unavailable:

the upper right block is located outside a border of an image where the current image block is located;

the upper right block is located at a different slice from the current image block; and

the upper right block has not been encoded or decoded.

17. The prediction method according to claim 2, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located,

if the reference block is not located inside the border of the image where the current image block is located, the reference block is unavailable; or

determining whether the reference block is located in a same slice with the current image block,

if the reference block is not in the same slice with the current image block, the reference block is unavailable; or

determining whether the reference block has already been encoded or decoded,

if the reference block has not already been encoded or decoded, the reference block is unavailable.

18. The predictor according to claim 10, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located,

if the reference block is not located inside the border of the image where the current image block is located, the reference block is unavailable; or

determining whether the reference block is located in a same slice with the current image block,

if the reference block is not in the same slice with the current image block, the reference block is unavailable; or

determining whether the reference block has already been encoded or decoded,

if the reference block has not already been encoded or decoded, the reference block is unavailable.

## CLAIMS

1. A prediction method in an image block encoding or decoding, comprising:

obtaining availability information about reference blocks of a current image block, and determining whether the reference blocks are available for intra prediction according to the availability information, wherein the availability information comprises: whether a reference block is located inside a border of an image where the current image block is located; whether the reference block is located in a same slice with the current image block; and whether the reference block has already been encoded or decoded, wherein the reference blocks of the current image block comprise a left side block, an upper side block, and an upper left block of the current image block;

if at least one of the reference blocks is available, and at least one is unavailable, filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block, wherein filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block comprising, determining a pixel value in an adjacent reference side in the available reference block, filling the pixel value to a pixel value of an adjacent reference side in the unavailable reference block as the reference pixel value of the current image block; and

predicting the current image block according to the reference pixel value.

2. The prediction method according to claim 1, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located;

determining whether the reference block is located in a same slice with the current image block; and

determining whether the reference block has already been encoded or decoded,

if the reference block is located inside the border of the image where the current image block is located, is located in the same slice with the current image block, and has already been encoded or decoded, the reference block is available.

3. The prediction method according to claim 1, wherein the if at least one of the reference blocks is available, and at least one is unavailable, filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block comprises:

if the left side block is available, and the upper side block is unavailable, filling the pixel value of the left side block to the upper side block;

if the upper side block is available, and the left side block is unavailable, filling the pixel value of the upper side block to the left side block;

if the upper left block is unavailable, and one of the left side block and upper side block is available, filling the pixel value of the available one of the left side block and upper side block to the upper left block; and

if the upper left block is unavailable, and both the left side block and upper side block are available, obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block.

4. The prediction method according to claim 3, wherein the obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block comprises:

obtaining an average value of the pixel values of pixel points in the left side block and upper side block that are nearest to a pixel point at an upper left corner of the current image block; and

filling the average value to a lower right corner of the upper left block.

5. The prediction method according to claims 1 to 3, wherein the filling a pixel value in the available reference block to the unavailable reference block comprises:

obtaining a pixel value used for filling from pixel points in the available reference block that are nearest to a pixel point at an upper left corner of the current image block; and

filling the pixel value used for filling to the unavailable reference block.

6. A prediction method in a encoding or decoding, comprising:

obtaining a prediction direction;

if the prediction direction points to an upper right block of a current image block, the upper right block is unavailable, and a left side block of the current image block is available, filling a pixel value of the left side block of the current image block to a lower side block of the current image block, and obtaining a pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling; and

predicting a pixel value of the current image block according to the pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling and the prediction direction.

7. The prediction method according to claim 6, wherein when the upper right block meets any one of the following conditions, the upper right block is unavailable:

the upper right block is located outside a border of an image where the current image block is located;

the upper right block is located at a different slice from the current image block; and

the upper right block has not been encoded or decoded.

8. A predictor used in a encoding or decoding, comprising:

an availability determining module, configured to obtain availability information about reference blocks of a current image block, and determine whether the reference blocks are available for intra prediction according to the availability information, wherein the availability information comprises: whether a reference block is located inside a border of an image where the current image block is located; whether the reference block is located in a same slice with the current image block; and whether the reference block has already been encoded or decoded, wherein the reference blocks of the current image block comprise a left side block, an upper side block, and an upper left block of the current image block;

a pixel value filling module, configured to: if at least one of the reference blocks is available, and at least one is unavailable, fill a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block, wherein filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block comprising, determining a pixel value in an adjacent reference side in the available reference block, filling the pixel value to a pixel value of an adjacent reference side in the unavailable reference block as the reference pixel value of the current image block; and

a predicting module, configured to predict the current image block according to the reference pixel value.

9. The predictor according to claim 8, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located;

determining whether the reference block is located in a same slice with the current image block; and

determining whether the reference block has already been encoded or decoded,

if the reference block is located inside the border of the image where the current image block is located, is located in the same slice with the current image block, and has already been encoded or decoded, the reference block is available.

10. The predictor according to claim 9, wherein the if at least one of the reference blocks is

available, and at least one is unavailable, filling a pixel value in the available reference block to the unavailable reference block as a reference pixel value of the current image block comprises:

if the left side block is available, and the upper side block is unavailable, filling the pixel value of the left side block to the upper side block;

if the upper side block is available, and the left side block is unavailable, filling the pixel value of the upper side block to the left side block;

if the upper left block is unavailable, and one of the left side block and upper side block is available, filling the pixel value of the available one of the left side block and upper side block to the upper left block;

if the upper left block is unavailable, and both the left side block and upper side block are available, obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block.

11 The predictor according to claim 10wherein the obtaining an average value for the pixel values of the left side block and upper side block and filling it to the upper left block comprises:

obtaining an average value of the pixel values of pixel points in the left side block and upper side block that are nearest to a position of a pixel point at an upper left corner of the current image block; and

filling the average value to a lower right corner of the upper left block.

12 The predictor according to claims 8 to 11, wherein the filling a pixel value in the available reference block to the unavailable reference block comprises:

obtaining a pixel value used for filling from pixel points in the available reference block that are nearest to a pixel point at an upper left corner of the current image block; and

filling the pixel value used for filling to the unavailable reference block.

13. A predictor in a encoding or decoding, comprising:

a prediction direction obtaining module, configured to obtain a prediction direction;

a pixel value filling module, configured to: when the prediction direction points to an upper right block of a current image block, the upper right block is unavailable, and a left side block of the current image block is available, fill a pixel value of the left side block of the current image block to a lower side block of the current image block, and obtain a pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling; and

a predicting module, configured to predict a pixel value of the current image block according to the pixel value of the lower side block pointed to by the prediction direction in reverse extension after filling and the prediction direction.

14. The predictor according to claim 13, wherein when the upper right block meets any one

of the following conditions, the upper right block is unavailable:

the upper right block is located outside a border of an image where the current image block is located;

the upper right block is located at a different slice from the current image block; and

the upper right block has not been encoded or decoded.

15. The prediction method according to claim 1, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located,

if the reference block is not located inside the border of the image where the current image block is located, the reference block is unavailable; or

determining whether the reference block is located in a same slice with the current image block,

if the reference block is not in the same slice with the current image block, the reference block is unavailable; or

determining whether the reference block has already been encoded or decoded,

if the reference block has not already been encoded or decoded, the reference block is unavailable.

16. The predictor according to claim 8, wherein the determining whether the reference block is available according to the availability information comprises:

determining whether the reference block is located inside a border of an image where the current image block is located,

if the reference block is not located inside the border of the image where the current image block is located, the reference block is unavailable; or

determining whether the reference block is located in a same slice with the current image block,

if the reference block is not in the same slice with the current image block, the reference block is unavailable; or

determining whether the reference block has already been encoded or decoded,

if the reference block has not already been encoded or decoded, the reference block is unavailable.