

CLAIMS

1. A video encoding method according to spatial subdivisions, the method
5 comprising:

splitting a picture into two or more tiles and at least one slice segment;

encoding each of the tiles, independently from the other tiles; and

encoding maximum coding units including in a current tile from among maximum
coding units included in a current slice segment, with respect to each of the slice
10 segments included in the current tile.

2. The method of claim 1, wherein the performing of the encoding in each of
the slice segment comprises encoding a plurality of maximum coding units included in the
current slice segment, with respect to each of the at least one slice segment included in
15 the current tile, wherein the at least one slice segment does not span over a boundary of
the current tile.

3. The method of claim 1, wherein (i) the maximum coding units included in
one slice segment may be included in the same tile, (ii) the maximum coding units
20 included in one tile may be included in the same slice segment, and (iii) the maximum
coding units included in one slice segment may be included in the same tile, and at the
same time, the maximum coding units included in one tile may be included in one same
slice segment.

4. The method of claim 1, wherein when the slice segment is an independent
slice segment that may not use slice header information of a previous slice segment or a
dependent segment, and one slice includes one independent slice segment and at least
one dependent slice, (i) the maximum coding units included in one slice may be included
in the same tile, (ii) the maximum coding units included in one tile may be included in the
30 same slice, and (iii) the maximum coding units included in one slice may be included in
the same tile, and at the same time, the maximum coding units included in one tile may be
included in one same slice.

5. A video encoding method according to spatial subdivisions, the method comprising:

encoding a picture with respect to at least one slice segment;

5 generating a slice segment header including information representing whether a current slice segment is an initial slice segment in a current picture;

if the current slice segment is not the initial slice segment, adding information representing whether the current slice segment is a dependent slice segment using slice header information of a previous slice segment to the slice segment header; and

10 transmitting the slice segment header and symbols of the slice segment of each of the slice segments.

6. The method of claim 5, wherein the adding of the information representing whether the slice segment is the dependent slice segment to the slice segment header
15 comprises:

if the current slice segment is not a dependent slice segment, adding default information about the current slice segment to the slice segment header; and

if the current slice segment is a dependent slice segment, skipping adding some of default information about the current slice segment into the slice segment header.

20 7. A video decoding method according to spatial subdivisions, the method comprising:

receiving a bit stream obtained by splitting a picture into two or more tiles and at least one slice segment and being encoded;

25 decoding each of the tiles, independently from the other tiles; and

decoding maximum coding units included in a current tile from among maximum coding units included in a current slice segment, with respect to each of the slice segments included in the current tile.

30 8. The method of claim 7, wherein the decoding of each of the slice segments comprises decoding a plurality of maximum coding units included in the current slice

segment, with respect to each of the at least one slice segment included in the current tile, and the at least one slice segment does not span over a boundary of the current tile.

9. The method of claim 7, wherein (i) the maximum coding units included in one slice segment may be included in the same tile, (ii) the maximum coding units included in one tile may be included in the same slice segment, and (iii) the maximum coding units included in one slice segment may be included in the same tile, and at the same time, the maximum coding units included in one tile may be included in one same slice segment.

10. The method of claim 7, wherein when the slice segment is an independent slice segment that may not use slice header information of a previous slice segment or a dependent segment, and one slice includes one independent slice segment and at least one dependent slice, (i) the maximum coding units included in one slice may be included in the same tile, (ii) the maximum coding units included in one tile may be included in the same slice, and (iii) the maximum coding units included in one slice may be included in the same tile, and at the same time, the maximum coding units included in one tile may be included in one same slice.

11. A video decoding method according to spatial subdivisions, the method comprising:

receiving a bit stream including a slice segment header and symbols from each slice segment;

parsing information representing whether a current slice segment is an initial slice segment in a current picture, from a current slice segment header;

if the current slice segment is not the initial slice segment, parsing information representing whether the current slice segment is a dependent slice segment using slice header information of a previous slice segment, from the current slice segment header; and

decoding the current slice segment by using the information parsed from the current slice segment header and the symbols of the current slice segment.

12. The method of claim 11, wherein the parsing of the information representing whether the current slice segment is a dependent slice segment comprises:

if the current slice segment is not a dependent slice segment, parsing default information about the current slice segment from the current slice segment header; and

5 if the current slice segment is a dependent slice segment according to the parsed information, determining default information about the current slice segment by using the information parsed from the previous slice segment header.

13. A video encoding apparatus according to spatial subdivisions, the
10 apparatus comprising:

a sub-region divider for dividing a picture into two or more tiles and at least one slice segment; and

a sub-region encoder for encoding each of the tiles independently from the other tiles, and encoding maximum coding units included in a current tile from among maximum
15 coding units included in a current slice segment, with respect to each of the slice segments included in the current tile.

14. A video decoding apparatus according to spatial subdivisions, the
apparatus comprising:

20 a sub-region receiver for receiving a bit stream obtained by dividing a picture into two or more tiles and at least one slice segment and being encoded; and

a sub-region decoder for decoding each of the tiles independently from the other tiles, and decoding maximum coding units included in a current tile from among maximum coding units included in a current slice segment, with respect to each of the slice
25 segments included in the current tile.

15. A computer-readable recording medium having recorded thereon a program for executing the method according to any of claims 1, 5, 7, and 11.

Claims

1. A video decoding method according to spatial subdivisions, the method comprising:

receiving a bit stream including a slice segment header and symbols from each slice segment;

parsing information representing whether a current slice segment is an initial slice segment in a current picture, from a current slice segment header;

if the current slice segment is not the initial slice segment, parsing information representing whether the current slice segment is a dependent slice segment using slice header information of a previous slice segment, from the current slice segment header; and

decoding the current slice segment by using the information parsed from the current slice segment header and the symbols of the current slice segment.

2. The method of claim 1, wherein the parsing of the information representing whether the current slice segment is a dependent slice segment comprises:

if the current slice segment is not a dependent slice segment, parsing default information about the current slice segment from the current slice segment header; and

if the current slice segment is a dependent slice segment according to the parsed information, determining default information about the current slice segment by using the information parsed from the previous slice segment header.

3. A computer-readable recording medium having recorded thereon a program for executing the method according to claim 1.