[Claims]

1. A video decoding method comprising:

parsing offset merge information indicating whether offset parameters of a current block and at least one neighboring block from among blocks of video are identical to each other from a received bitstream;

restoring an offset type and offset values from among the offset parameter of the current block based on the offset merge information;

determining an edge class or a pixel value band of a restored pixel of the current block based on an edge type or a pixel value band type of the current block indicating the offset type; and

determining an offset value corresponding to the edge class or the pixel value band of the restored pixel from the offset values and adjusting a pixel value of the restored pixel according to the offset value.

2. The video decoding method of claim 1, wherein the determining of the edge class or the pixel value band of the restored pixel comprises:

in a case where an offset type of the current block is the edge type, comparing pixel values of a currently restored pixel and neighboring pixels of the currently restored pixel disposed according to the edge type and an edge size, and determining the edge class indicating whether the currently restored pixel is an edge pixel,

wherein the adjusting of the pixel value of the restored pixel according to the offset value comprises:

in a case where the offset values comprise offset values corresponding to edge classes allocated to a current offset type, determining an offset value corresponding to an edge class of the currently restored pixel from the offset values.

3. The video decoding method of claim 1, wherein the determining of the edge class or the pixel value band of the restored pixel comprises:

in a case where the offset type of the current block is the pixel value band type, determining the pixel value band indicating a pixel value range to which the pixel value of the currently restored pixel belong among a plurality of bands,

wherein the adjusting of the pixel value of the restored pixel according to the offset value comprises:

in a case where the offset values comprise offset values corresponding to pixel value bands allocated to a current offset type, determining an offset value corresponding to a pixel value band of the currently restored pixel from the offset values.

4. The video decoding method of claim 1, wherein the restoring of the offset type and the offset values comprises: if at least one offset parameter of a left block and an upper block of the current block is identical to the offset parameter of the current block based on the offset merge information, restoring the offset parameter of the current block as same as the at least one offset parameter of the left block and the upper block of the current block.

5. The video decoding method of claim 1, wherein the restoring of the offset type and the offset values comprises:, if at least one offset parameter of a left block and an upper block of the current block is different from the offset parameter of the current block based on the offset merge information, parsing and restoring the offset parameter of the current block from the received bitstream.

6. The video decoding method of claim 1, wherein the restoring of the offset type and the offset values comprises: performing prediction and restoration on offset parameters at least one color component among a luma component and chroma components of the current block by referring to each other's offset parameters among the offset parameters.

7. The video decoding method of claim 1, wherein the offset value is an average of difference values between restored pixels and original pixels included in the same edge class or the same pixel value band.

8. A video encoding method comprising:

determining an edge class according to an edge type of a current block from among blocks of video or a pixel value band according to a pixel value band type thereof;

determining an offset value corresponding to the edge class or the pixel value band by using difference values between restored pixels and original pixels included

in the edge class or the pixel value band; and

when an offset parameter of each block comprises an offset type indicating the edge type or the pixel value band type and an offset corresponding to the edge class or the pixel value band, based on identities between offset parameters of the current block and at least one neighboring block, encoding offset merge information of the current block indicating whether the offset parameter of the current block is encoded.

9. The video encoding method of claim 8, wherein the determining of the edge class and the pixel value band comprises: in a case where an offset of the current block is determined according to the edge type, comparing pixel values of a currently restored pixel and neighboring pixels of the currently restored pixel disposed according to the edge type and an edge size, and determining the edge class indicating whether the currently restored pixel is an edge pixel.

10. The video encoding method of claim 8, wherein the determining of the edge class and the pixel value band comprises: in a case where an offset of the current block is determined according to pixel value band types of the restored pixels, determining the pixel value band indicating a pixel value range to which a pixel value of a currently restored pixel belong from among a plurality of bands.

11. The video encoding method of claim 8, wherein the encoding of the offset merge information of the current block comprises: if at least one offset parameter of a left block and an upper block of the current block is identical to the offset parameter of the current block, encoding the offset merge information excluding the offset parameter of the current block.

12. The video encoding method of claim 8, wherein the determining of the offset value corresponding to the edge class or the pixel value band comprises: determining the offset value that is an average of difference values between restored pixels and original pixels included in the same edge class or the same pixel value band.

13. A video decoding apparatus comprising:

an offset parameter parsing unit for parsing offset merge information indicating whether offset parameters of a current block and at least one neighboring block from among blocks of video are identical to each other from a received bitstream, restoring an offset type and offset values from among the offset parameter of the current block based on the offset merge information; and

an offset adjusting unit for determining an edge class or a pixel value band of a restored pixel based on an edge type or a pixel value band type of the current block indicating the offset type, and determining an offset value corresponding to the edge class or the pixel value band of the restored pixel from the offset values and adjusting a pixel value of the restored pixel according to the offset value.

14. A video encoding apparatus comprises:

an offset determining unit for determining an edge class according to an edge type of a current block from among blocks of video or a pixel value band according to a pixel value band type thereof, and determining an offset value corresponding to the edge class or the pixel value band by using difference values between restored pixels and original pixels included in the edge class or the pixel value band; and

an offset parameter encoding unit for, when an offset parameter of each block comprises an offset type indicating the edge type or the pixel value band type and an offset corresponding to the edge class or the pixel value band, based on identities between offset parameters of the current block and at least one neighboring block, encoding offset merge information of the current block indicating whether the offset parameter of the current block is encoded.

15. A computer readable recording medium having recorded thereon a program for executing the method of any one of claims 1 and 8.

[Claims]

1. A video decoding method comprising:

parsing, from a bitstream, offset merge information indicating whether an offset parameter of a current block is determined according to an offset parameter of a neighboring block;

when the offset merge information indicates that the offset parameter of the current block is determined according to the offset parameter of the neighboring block, determining offset parameter of the current block using to the offset parameter of the neighboring block, and compensating for a sample value of a restored pixel of the current block by using the offset parameter; and

when the offset merge information indicates that the offset parameter of the current block is not determined according to the offset parameter of the neighboring block, obtaining, from the bitstream, the offset parameter of the current block,

wherein the offset parameter comprises offset type information and an offset value,

wherein, obtaining, from the bitstream, the offset parameter of the current block comprises:

when the offset type information is band offset type information, obtaining the offset value of the current block from the bitstream, and compensating for the sample value of the restored pixel of the current block by using the offset value, and

when the offset type information is edge offset type information, obtaining, from the bitstream, an edge class of the current block indicating an edge direction and offset value according to the edge class, and compensating for the sample value of the restored pixel of the current block by using the offset value corresponding to the edge class of the restored pixel of the current block.

2. The video decoding method of claim 1, wherein, when the offset merge information indicates that the offset parameter of the current block is determined according to the offset parameter of the neighboring block, the offset parameter of the current block is not parsed from the bitstream.

3. A video decoding apparatus comprising:

a processor which is configured for parsing, from a bitstream, offset merge information indicating whether an offset parameter of a current block is determined according to an offset parameter of a neighboring block,

wherein, when the offset merge information indicates that the offset parameter of the current block is determined according to the offset parameter of the neighboring block, the processor is configured for determining offset parameter of the current block using to the offset parameter of the neighboring block, and compensating for a sample value of a restored pixel of the current block by using the offset parameter; and

when the offset merge information indicates that the offset parameter of

the current block is not determined according to the offset parameter of the neighboring block, the processor is configured for obtaining, from the bitstream, the offset parameter of the current block,

wherein the offset parameter comprises offset type information and an offset value,

when the offset type information is band offset type information, the processor is configured for obtaining the offset value of the current block from the bitstream, and compensating for the sample value of the restored pixel of the current block by using the offset value, and

when the offset type information is edge offset type information, the processor is configured for obtaining, from the bitstream, an edge class of the current block indicating an edge direction and offset value according to the edge class, and compensating for the sample value of the restored pixel of the current block by using the offset value corresponding to the edge class of the restored pixel of the current block.