Claims

1. An image decoding device comprising:

a decoder that decodes first information about whether or not to carry out a sample adaptive offset process on a picture, which is a decoded picture and on which a prediction process is carried out, from encoded data, decodes, when the first information indicates that the sample adaptive offset process is carried out, second information indicating whether a filter parameter for a largest coding block in the picture is same as that for another largest coding block which is adjacent to top or left of the largest coding block, and decodes third information about whether or not to carry out a plurality of types of filtering processes including a deblocking filtering process and the sample adaptive offset process on a coding block divided from the largest coding block;

a filter that, when the second information indicates that the filter parameter for the largest coding block is same as that for the another largest coding block and the third information indicates that the plurality of types of filtering processes is not carried out on the coding block, carries out the plurality of types of filtering processes with the filter parameter on the largest coding block excluding the coding block to output a decoded image after the plurality of types of filtering processes.

2. An image encoding device comprising:

an encoding controller that determines a largest coding block in a picture;

a block divider that divides the picture by the largest coding block, and divides the largest coding block into coding blocks;

a filter that carries out a plurality of types of filtering processes on the largest coding block excluding one of the coding blocks on which a deblocking filtering process and a sample adaptive offset process are not carried out, the plurality of types of filtering processes being same as that for another largest coding block which is adjacent to top or left of the largest coding block; and

an encoder encodes first information about whether or not to carry out the sample adaptive offset process on the picture, wherein, when the first information indicates that the sample adaptive offset process is carried out on the picture, the encoder encodes second

information indicating whether a filter parameter for the sample adaptive offset process on the largest coding block is same as that for the another largest coding block which is adjacent to top or left of the largest coding block, and third information about whether or not to carry out the plurality of types of filtering processes on the one of the coding blocks .

3. An image decoding method comprising:

decoding first information about whether or not to carry out a sample adaptive offset process on a picture, which is a decoded picture and on which a prediction process is carried out, from encoded data;

decoding, when the first information indicates that the sample adaptive offset process is carried out, second information indicating whether a filter parameter for a largest coding block in the picture is same as that for another largest coding block which is adjacent to top or left of the largest coding block, and decoding third information about whether or not to carry out a plurality of types of filtering processes including a deblocking filtering process and the sample adaptive offset process on a coding block divided from the largest coding block; and

carrying out the plurality of types of filtering processes with the filter parameter on the largest coding block excluding the coding block to output a decoded image after the plurality of types of filtering processes, when the second information indicates that the filter parameter for the largest coding block is same as that for the another largest coding block and the third information indicates that the plurality of types of filtering processes is not carried out on the coding block.

4. An image encoding method comprising:

determining a largest coding block in a picture;

dividing the picture by the largest coding block, and dividing the largest coding block into coding blocks;

carrying out a plurality of types of filtering processes on the largest coding block excluding one of the coding blocks on which a deblocking filtering process and a sample adaptive offset process are not carried out, the plurality of types of filtering process being same as that for another largest coding block which is adjacent to top or left of the largest coding block; and

encoding first information about whether or not to carry out the sample adaptive offset filtering process on the picture, and when the first information indicates that the sample adaptive offset process is carried out on the picture, encoding second information indicating whether a filter parameter for the sample adaptive offset process on the largest coding block is same as that for the another largest coding block which is adjacent to top or left of the largest coding block, and third information about whether or not to carry out the plurality of types of filtering processes on the one of the coding blocks.

5. A computer-readable storing medium storing encoded data which is obtained by carrying out a sample adaptive offset process on a picture and encoding, the encoded data comprising:

first information indicating whether or not to carry out the sample adaptive offset process on the picture, which is a decoded picture and on which a prediction process is carried out;

information indicating a size of a largest coding block divided from the picture;

information indicating a size of a coding block divided from the largest coding block;

second information indicating whether a filter parameter for the largest coding block in the picture is same as that for another largest coding block which is adjacent to top or left of the largest coding block; and

third information indicating whether or not to carry out a plurality of types of filtering processes including a deblocking filtering process and the sample adaptive offset process on the coding block divided from the largest coding block,

wherein the encoded data causes to an image decoding device to

divide the picture into the largest coding block by using the information indicating the size of the largest coding block;

divide the largest coding block into the coding block by using the information indicating the size of the coding block; and

carry out, when the first information indicates that the sample adaptive offset process is carried out on the picture, when the third information indicates that the plurality of types of filtering processes is not carried out on the coding block, and when the second information indicates that the filter parameter for the largest coding block is the same as that for the another

largest coding block, the plurality of types of filtering processes with the filter parameter on the largest coding block excluding the coding block to output a decoded image after the plurality of types of filtering processes.