with the I_PCM mode is not disclosed therein.

[0019]

Embodiments of the present invention are directed to enhancing encoding efficiency while suppressing a decrease in the efficiency of encoding processing.

Solution to Problem

[0020]

According to a first aspect of the present invention, there is provided an image processing apparatus comprising: an encoding mode setter adapted to determine whether or not a non-compression mode is to be selected as an encoding mode for encoding image data and to set, in units of coding units that are partial regions of an image of each picture and that have a hierarchical structure from a largest coding unit to a smallest coding unit, the non-compression mode being an encoding mode in which the image data is output as encoded data without encoding the image data, when the non-compression mode is to be selected; a filter processing controller adapted to perform control, on a coding unit for which the non-compression mode has been set by the encoding mode setter, to skip filter processing in which filtering is performed on a locally decoded image after a deblocking filter; and an encoder adapted to perform to arithmetic coding to encode the image data in units of the coding units

using the locally decoded image in accordance with a mode set by the encoding mode setter. [0021]

The image processing apparatus may further include a shift processing controller that performs control, on a coding unit for which the non-compression mode has been set by the encoding mode setter, to skip shift processing in which a bit precision for encoding or decoding is increased; and a shift processor that performs the shift processing on

[0028]

The image processing apparatus may further include an identification information generator that generates identification information in units of the coding units, the identification information indicating whether the non-compression mode has been set by the encoding mode setter.

[0029]

According to a second aspect of the present invention, there is provided an image processing method for an image processing apparatus, comprising the steps of: determining, with an encoding mode setter, whether or not a non-compression mode is to be selected as an encoding mode for encoding image data and setting, in units of coding units that are partial regions of an image of each picture and that have a hierarchical structure from a largest coding unit to a smallest coding unit, the non-compression mode being an encoding mode in which the image data is output as encoded data without encoding the image data, when the non-compression mode is to be selected; performing, with a filter processing controller, control of filter processing, on a coding unit for which the non-compression mode has been set, to skip filter processing in which filtering is performed on a locally decoded image after a deblocking filter; and encoding, by arithmetic coding with an encoder,

the image data in units of the coding units using the locally decoded image in accordance with a set mode.

[0030]

Disclosed herein is an image processing apparatus. The image processing apparatus includes an encoding mode determiner that determines, in units of coding units having a hierarchical structure, whether a non-compression mode has been selected as an encoding mode for encoding image data, the non-compression mode being an encoding mode in which the

controller so as to undergo the filter processing, the pixels being included in a current block which is a target to be processed.

[0033]

The filter processor may perform adaptive loop filtering on the locally decoded image, the adaptive loop filtering being adaptive filter processing using classification processing.

[0034]

The filter processor may perform the filter processing, in a case where filter identification information indicating whether the filter processing has been performed indicates that the filter processing has been performed on image data corresponding to the current block which is a target to be processed, only when control is performed by the filter processing controller so as to perform the filter processing on all pixels included in the current block.

[0035]

The encoding mode determiner may determine whether the non-compression mode has been selected, on the basis of identification information indicating whether the non-compression mode has been selected in units of the coding units.

[0036]

Disclosed herein is an image processing method for an image processing apparatus. The image processing method includes determining, with an encoding mode determiner, in units of coding units having a hierarchical structure, whether a non-compression mode has been selected as an encoding mode for encoding image data, the non-compression mode being an encoding mode in which the image data is output as encoded data; and decoding, with a decoder, the encoded data in units of the coding units in accordance with a determined mode.

[0037]

According to an embodiment of the presentinvention, whether a non-compression mode is to be selected as an encoding mode for encoding image data is set in units of coding units having a hierarchical structure, the non-compression mode being an encoding mode in which the image data is output as encoded data, and the image data is encoded in units of the coding units in accordance with a set mode.

[0038]

According to another embodiment of the presentinvention, whether a non-compression mode has been selected as an encoding mode for encoding image data is determined in units of coding units having a hierarchical structure, the non-compression mode being an encoding mode in which the image

data is output as encoded data, and the encoded data is decoded in units of the coding units in accordance with a determined mode.

Advantageous Effects of Invention

[0039]

According to embodiments of the present invention, an image can be processed. In particular, encoding efficiency can be enhanced while suppressing a decrease in the efficiency of encoding processing.

Brief Description of Drawings

[0040]

[Fig. 1] Fig. 1 is a block diagram illustrating an image encoding apparatus that outputs image compression information based on an AVC coding format.

[Fig. 2] Fig. 2 is a block diagram illustrating an image decoding apparatus that receives image compression information based on the AVC coding format.

[Fig. 3] Fig. 3 is a diagram illustrating an example of the type of macroblock.

[Fig. 4] Fig. 4 is a diagram describing an example configuration of coding units.

[Fig. 5] Fig. 5 is a diagram describing a method for increasing an amount of bits in internal arithmetic.

[Fig. 6] Fig. 6 is a diagram describing an adaptive loop filter.